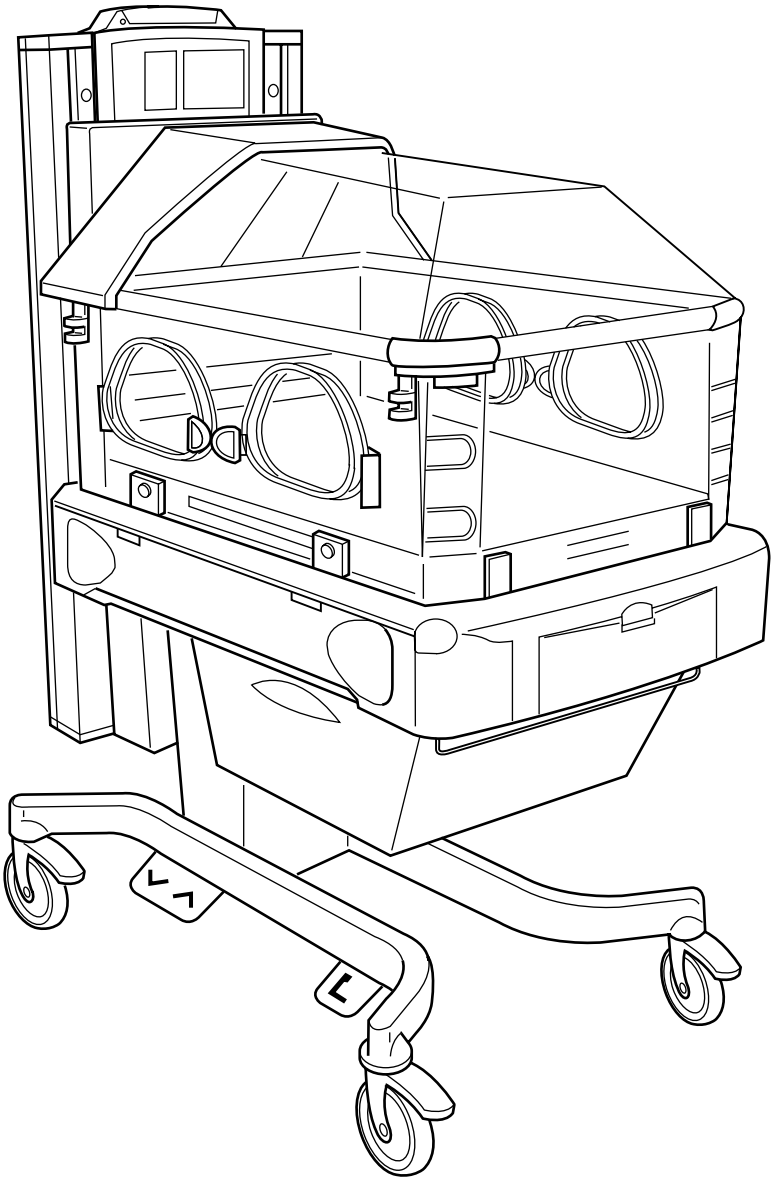
OHMEDA Medical

Giraffe™ OmniBed™

Operator's Manual



User Responsibility

This Product will perform in conformity with the description thereof contained in this operating manual and accompanying labels and/or inserts, when assembled, operated, maintained and repaired in accordance with the instructions provided. This Product must be checked periodically. A defective Product should not be used. Parts that are broken, missing, plainly worn, distorted or contaminated should be replaced immediately. Should such repair or replacement become necessary, Ohmeda Medical recommends that a telephone or written request for service advice be made to the nearest Ohmeda Medical Regional Service Center. This Product or any of its parts should not be repaired other than in accordance with written instructions provided by Ohmeda Medical and by Ohmeda Medical trained personnel. The Product must not be altered without the prior written approval of Ohmeda Medical's Quality Assurance Department. The user of this Product shall have the sole responsibility for any malfunction which results from improper use, faulty maintenance, improper repair, damage, or alteration by anyone other than Ohmeda Medical.

CAUTION ⚠ U.S Federal law restricts this device to sale by or on the order of a licensed medical practitioner.

AAA A 12345

This alpha character indicates the year of patient probe manufacture and when the serial number was assigned; "A" = 1997, "B" = 1998, "C" = 1999, "D" = 2000, etc. "I" and "O" are not used.

Table of Contents

General Information

Incubator/Warmer Operating Modes 1-1
Control Modes 1-2
Controls and Displays 1-2
Incubator Operation 1-3
Warmer Operation 1-4
Operating Mode Transition 1-5
Accessory Options 1-5
Alarms 1-11
Options Alarms 1-15
Alarm Table 1-16
Cable Connections and Mechanical Controls 1-18

Checkout

Mechanical Checks 2-1
Controller Checks 2-2
Accessory Checks 2-3

Operating the OmniBed

Basic Operating Procedure 3-1
Operation as an Incubator 3-3
Operation as a Warmer 3-4
Attaching the Skin Temperature Probe 3-4
Additional Operating Procedures 3-5
Accessing the Baby 3-5
Raising the Canopy 3-6
Raising and Lowering the Bed 3-6
Tilting the Bed 3-6
Using the X-ray Tray 3-7
Administering Oxygen 3-7
Installing wristlets 3-7
Using the humidifier 3-8
Thermalink option 3-9
Using the In-Bed Scale 3-10
Mounting Accessories 3-11
Gas Cylinder Holder 3-12
Tubing Management Arm 3-12
Oscillator Port Cover 3-12

Maintaining the OmniBed

Repair Policy 4-1
Maintenance schedule 4-2
Disassembling the OmniBed for complete cleaning 4-3
Cleaning and disinfecting individual components 4-5

Accessories

Appendix

Specifications A-1
Performance A-2

Definitions

⚠Warnings

Before using the OmniBed, read through this entire manual. As with all medical equipment, attempting to use this device without a thorough understanding of its operation may result in patient or user injury. This device should only be operated by personnel trained in its operation under the direction of qualified medical personnel familiar with the risks and benefits of this type of device. **Additional precautions specific to certain procedures are found in the text of this manual.**

Complete the Checkout procedures in this manual before putting the unit into operation. If the unit fails any portion of the checkout procedure it must be removed from use and repaired.

Do not use the OmniBed in the presence of flammable anesthetics; an explosion hazard exists under these conditions.

Always disconnect the power before performing service or maintenance procedures detailed in this manual. Apply power only if you are specifically instructed to do so as part of the procedure.

Thoroughly air dry the OmniBed after cleaning it with flammable agents. Small amounts of flammable agents, such as ether, alcohol or similar cleaning solvents left in the incubator can cause a fire.

⚠Cautions

Only competent individuals trained in the repair of this equipment should attempt to service it as detailed in the Service Manual (6600-0343-000).

Detailed information for more extensive repairs is included in the service manual solely for the convenience of users having proper knowledge, tools and test equipment, and for service representatives trained by Ohmeda Medical.

Note: A Note provides additional information to clarify a point in the text.

CAUTION: A Caution statement is used when the possibility of damage to the equipment exists.

WARNING: A Warning statement is used when the possibility of injury to the patient or the operator exists.

Symbols

Attention! Consult the manual for more information.

Type B equipment.

Functional Earth Terminal

Protection Earth Terminal

Alarm Silence

Alternating Current

Hot surface, do not touch

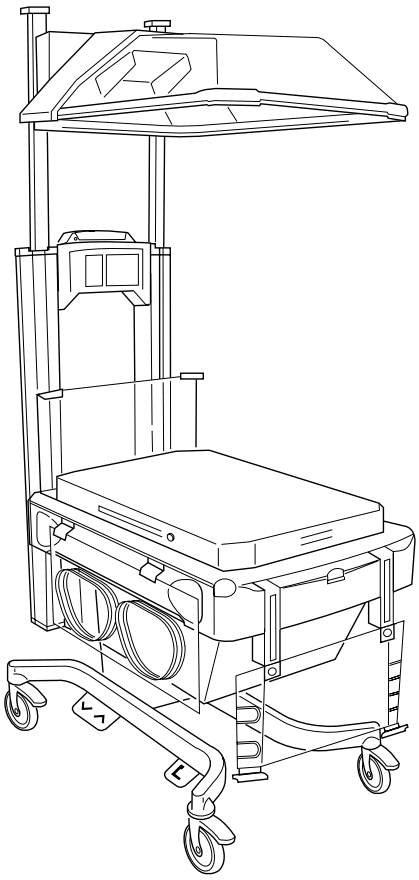
MAX Maximum

CE European Union Representative

General Information

Incubator/Warmer operating modes

The Giraffe™OmniBed™ combines the features of an incubator and a radiant warmer. When used as an incubator, a fan and heater beneath the bed circulate warm air through the closed infant compartment. The baby can be accessed through portholes or doors. When you require even greater access to the baby, the canopy can be raised and the compartment walls can be lowered. As the canopy raises, doors open to expose a focused radiant heating element inside the canopy that maintains the baby's temperature like a warmer. The OmniBed allows the full range of clinical procedures without the disruptive intervention of transferring the baby from one care bed to another.



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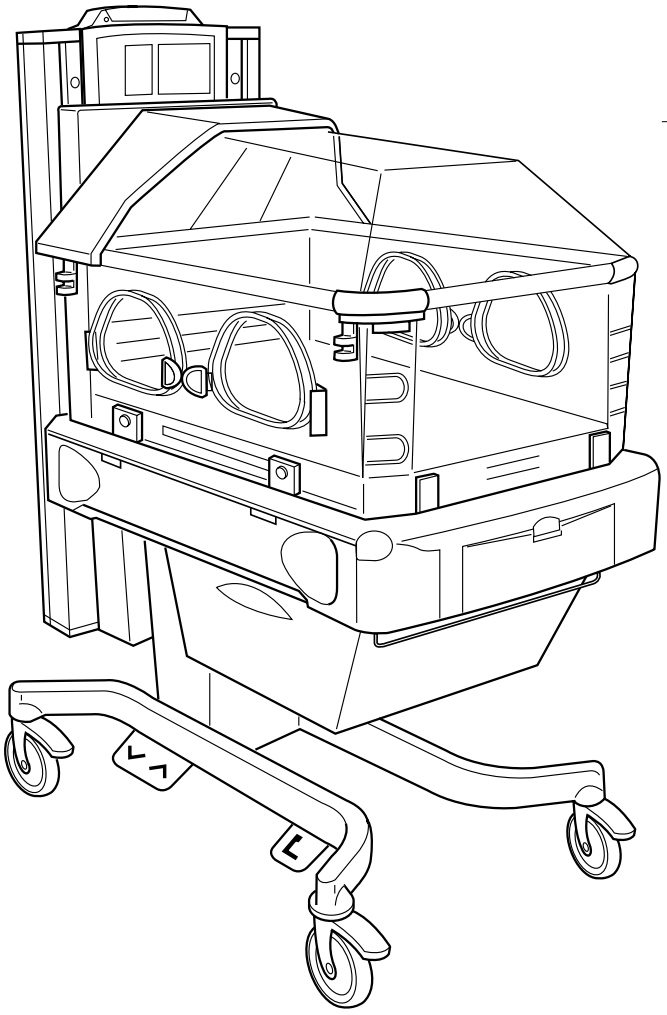

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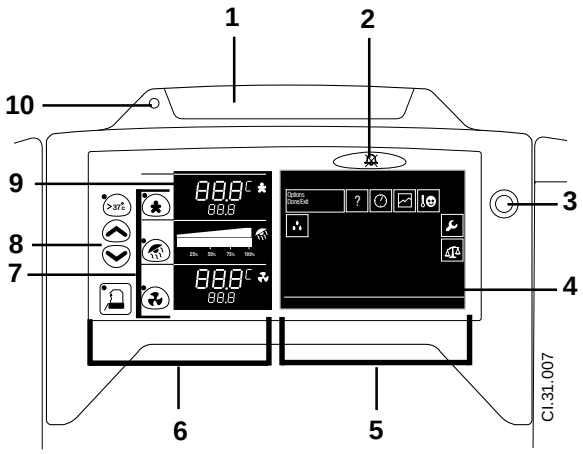
General Information

Control Modes

The OmniBed has two control modes when used as either an incubator or a warmer. With the compartment closed, the OmniBed controls the inside temperature comparing air temperature readings from the probe on the compartment wall to a setting you enter using the control panel (**air mode**) or from a probe attached to the baby's skin (**baby mode**). With the canopy raised, the OmniBed controls radiant heater output from a heater power percentage setting that you enter using the control panel (**manual mode**) or by using temperature readings from a probe attached to the baby's skin (**baby mode**).



1. *Alarm Light*
2. *Alarm Silence Button*
3. *Options Control Knob*
4. *Graphics Screen*
5. *Options Displays and Controls*
6. *Temperature Regulation Controls*
7. *ControlModeButtons*
8. *Temperature/Power controls*
9. *Numeric Displays*
10. *Power Failure Indicator*

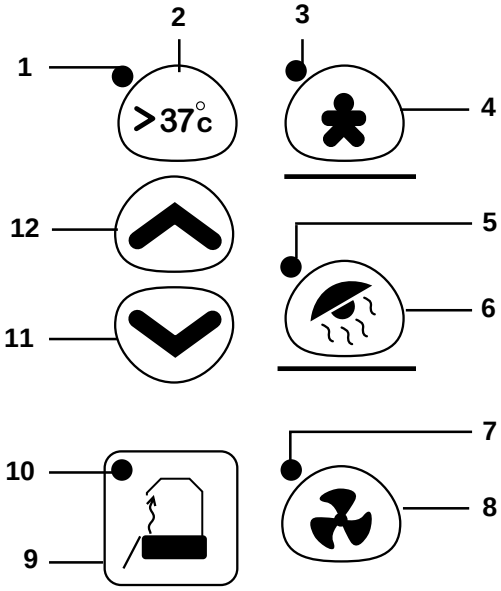
Controls and Displays

The controls and displays, located at the top of the uprights at the head of the bed, can be divided into two areas: on the left are the buttons and numeric temperature displays that control the temperature regulation of the infant, on the right are the graphics display screen and control knob that control all the accessory options.Temperatures can be shown in Celsius or Fahrenheit degrees: the default setting is Celsius.

Temperature Regulation

At start up, the OmniBed prompts you to select one of the control modes. If the unit was used in the last 2 hours, it will ask if you would like to retain the settings you used previously. If you are using the OmniBed as an incubator (canopy closed)- you select baby or air mode. If you are using the OmniBed as a warmer (canopy open)- you select baby or manual mode.

If you start with the canopy open, or open the bed during the first minutes after start up, and you do not select a control mode, the graphics screen will show the "Warm Up Mode" message and the radiant heater will automatically run at 100% power. When ten minutes has elapsed and you still have not selected a control mode, the graphics display will show the "Preheat Zone" message and the radiant heater will then run at the preheat level; the default preheat level setting is 25% power.



1. *Greater than 37°C Indicator*
2. *Greater than 37°C Button*
3. *Baby Mode Indicator*
4. *Baby Mode Button*
5. *Manual Mode Indicator*
6. *Manual Mode Button*
7. *Air Mode Indicator*
8. *Air Mode Button*
9. *Boost Air Curtain Button*
10. *Boost Air Curtain Indicator*
11. *Decrease Temperature/Power*
12. *Increase Temperature/Power*

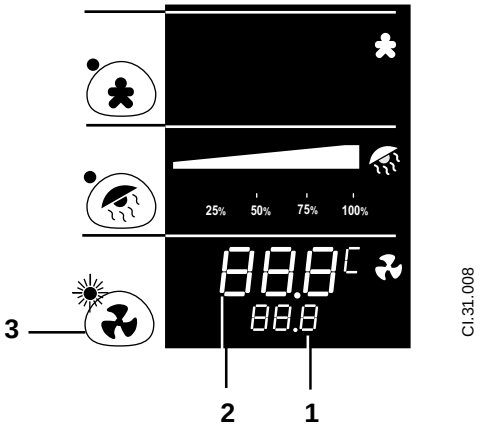
Incubator operation

When operating as an incubator, select the control mode by pushing the Air Mode Button at the bottom or the Baby Mode Button at the top of the temperature regulation controls.

Air Control Mode

The Air Mode Indicator lights when air mode is selected. Two temperature values are shown in the lower third of the display: the value shown in the larger numerals at the top is the air temperature measured by the compartment probe, the value shown below in smaller numerals is the air set temperature. The set temperature can be adjusted using the temperature/power buttons located at the left of the mode buttons. Temperature settings from 20° to 37°C can be entered in 0.1°C increments. Temperatures from 37° to 39°C can only be entered after pressing the >37°C Button.

Note: When operating the OmniBed as an incubator in the air mode with a probe attached to the infant's skin, the infant's temperature will also be shown in the baby temperature section at the top of the display.

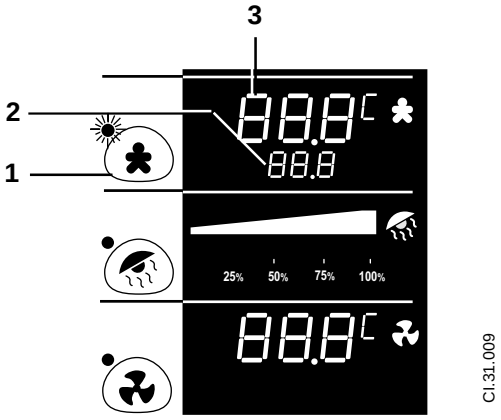


1. *Air Set Temperature*
2. *Air Temperature*
3. *Air Mode Button*

Baby Control Mode

The Baby Mode Indicator lights when the baby mode is selected. Two temperature values are shown in the upper third of the display: the value shown in larger numerals at the top is the temperature measured by the probe on the infant's skin, the value shown below in smaller numerals is the baby set temperature, which can be adjusted by using the temperature/power buttons located at the left of the mode buttons. Temperature settings from 35° to 37°C can be entered in 0.1°C increments. Temperatures settings from 37° to 37.5°C can only be entered after pressing the >37°C Button.

Note: When operating the OmniBed as an incubator in the baby mode, the compartment temperature will also be shown in the air temperature display section at the bottom of the display.



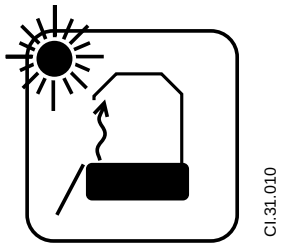
1. *Baby Mode Button*
2. *Baby Set Temperature*
3. *Baby Temperature*

Boost Air Curtain

If the OmniBed is being operated as an incubator, and the doors will be open for an extended length of time, pushing the Boost Air Curtain Button increases fan speed and improves open door thermal performance.

An indicator on the button lights when the Boost Air Curtain is activated. Running the fan at higher speed, however, will raise the noise level in the infant compartment. To deactivate the Boost Air Curtain, push the button a second time to resume Whisper Quiet™ mode. The Boost Air Curtain will automatically shut off after twenty minutes and the indicator light will go out. The button must be pressed again to continue for another twenty minutes at high speed.

Note: The fan speed may increase automatically due to other requirements without pushing the Boost Air Curtain button, and in these cases the button indicator will not light.



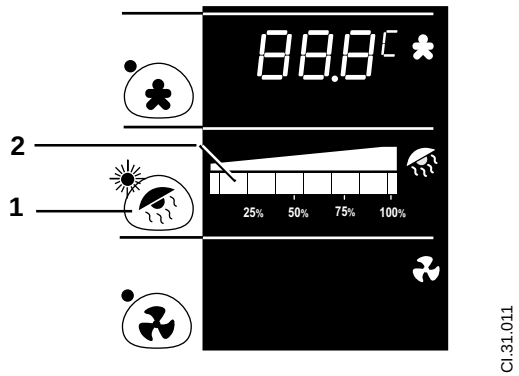
Warmer Operation

When operating as a radiant warmer, select the control mode by pushing the Manual Mode Button in the middle or the Baby Mode Button at the top of the controls.

Manual Control Mode

The Manual Mode Indicator lights when the manual mode is selected. The power setting is indicated by the bar graph LED in the middle third of the display. The percentage of full power can adjusted in 5% increments using the temperature/power buttons located to the left of the mode buttons.

Note: when operating the OmniBed as a warmer in the manual mode with a probe attached to the infant's skin, the infant's temperature will also be shown in baby temperature section at the top of the display.

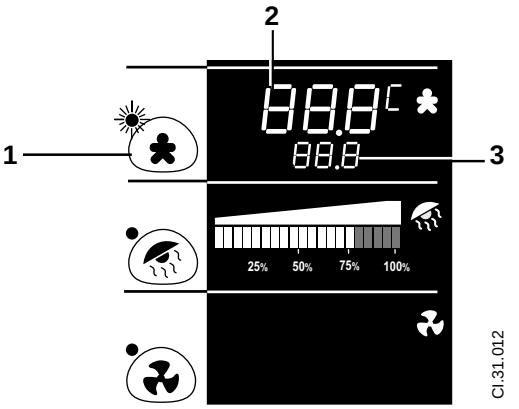


1. *Manual Mode Button*
2. *% Radiant Heater Power*

Baby Control Mode

The Baby Mode Indicator lights when baby mode is selected. Two temperature values are shown in the upper third of the display: the value shown in larger numerals at the top is the temperature measured by the probe on the infant's skin, the value shown below in smaller numerals is the baby set temperature. The set temperature can be adjusted by using the temperature/power buttons located to the left of the mode buttons. Temperature settings from 35° to 37°C can be entered in 0.1°C increments. Temperature settings from 37° to 37.5°C can only be entered after pressing the >37°C Button.

Note: when operating the OmniBed as a warmer in the baby mode, the bar graph in the middle of the display will also indicate the percentage of power at which the heater is currently running.

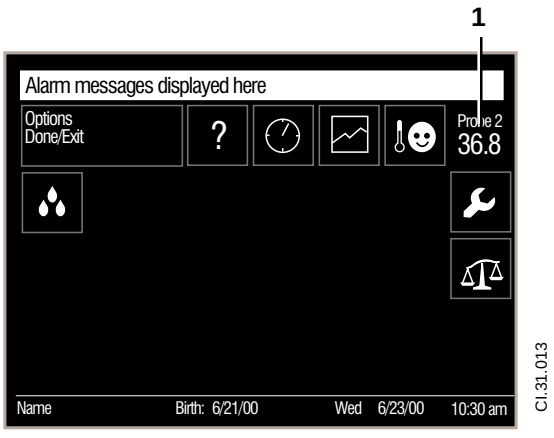


1. *Baby Mode Button*
2. *Baby Temperature*
3. *Baby Set Temperature*

Operating with Two Temperature Probes

The OmniBed is equipped with two patient temperature probe jacks for co-bedding of twins, or to monitor a single baby's temperature from two anatomical sites. They are identified as probe 1 and probe 2 on the jack panel behind the bed. Temperature readings for probe jack 1 are displayed in Baby Temperature at the top of the numeric displays. Temperature readings from probe jack 2 are displayed in the upper right corner of the graphic display labeled Probe 2.

The OmniBed will only Baby Control from a probe attached to jack 1. When both jack 1 and jack 2 are used, the unit will not operate in the Baby Control mode.



1. *Probe 2 Temperature*

Operating Mode Transition

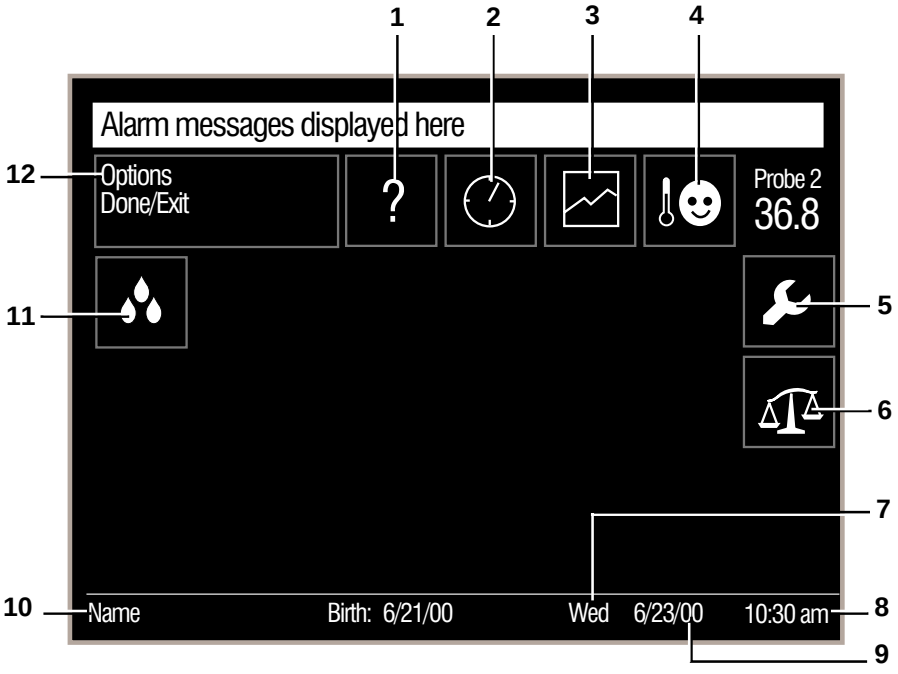
If the canopy is raised while the OmniBed is being operated as an incubator, it automatically switches to operation as a radiant warmer. If it was in the baby mode as an incubator, after the canopy is raised it will continue to operate in the baby mode, using the same baby set temperature you entered earlier.

If the canopy is raised while the OmniBed is being operated in the air mode as an incubator, it will operate in the manual mode as a warmer. The radiant heater will activate at the preheat level (the factory set preheat level is 25%; this can be adjusted on the service screen), and the OmniBed will prompt you to select a heater power percentage.

If the canopy is lowered while the OmniBed is being operated as a radiant warmer, it automatically switches to operation as an incubator. If it was in the baby mode as a warmer, after the canopy is lowered it will continue to operate in the baby mode, using the same baby set temperature you entered earlier.

If the canopy is lowered while the OmniBed is being operated in the manual mode as an warmer, it will operate in the air mode as an incubator. The compartment heater and fan will start at the last air set temperature saved since power-off, or at the preheat temperature of 33°C, and the OmniBed will prompt you to select an air set temperature.

Accessory Options



1. *Help*
2. *Timer*
3. *Trending*
4. *Comfort Zone*
5. *Setup/Customize*
6. *Scale*
7. *Day*
8. *Time**
9. *Date**
10. *Baby Information*
11. *Humidity*
12. *Options*

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* The date and time may be set using the service screen; see the service manual.

The OmniBed may be equipped with a number of accessory options. Menu icons of these options are shown on the graphics display at the right of the control area. Pressing the knob activates the screen. Rotating the control knob either direction scrolls through each menu icon; highlighting each icon as it is selected. Pressing in the control knob selects the highlighted option and brings up its menu screen.

General Information

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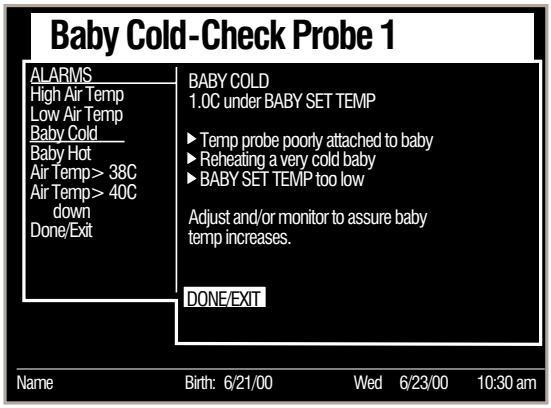
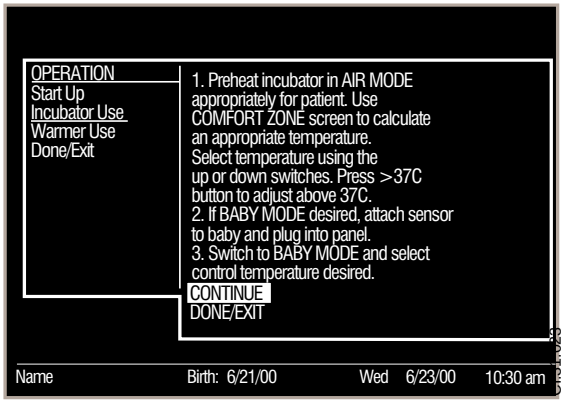
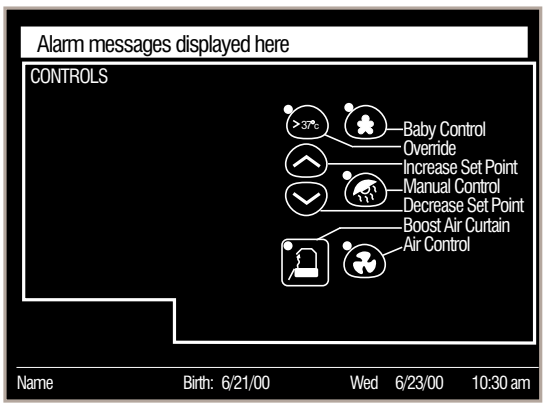
Help: Select the Help icon (question mark) to bring up the “Help” screen. The screen will present a menu of topics on how your OmniBed unit works. “Alarms” list all the alarm messages on the left and more detailed descriptions of the alarm and how to react to a given alarm on the right. “Controls” identifies the various button and switches on the control panel. “Operation” lists basic procedures on the left and step by step instructions on the right. Select Done/Exit to return to the option icon screen.

If you select the Help icon during an alarm condition, the description of that particular alarm will automatically appear on the screen; it is not necessary to scroll through the help menu options to find it.



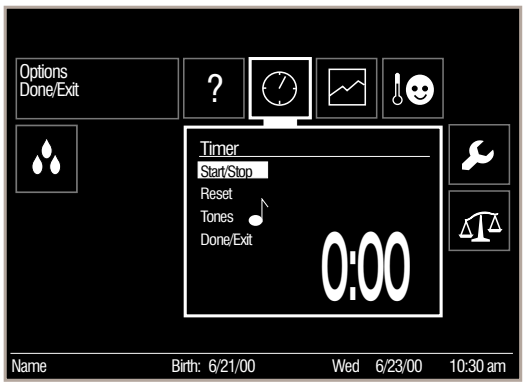

OPERATION
Start Up
Incubator Use
Warmer Use
Done/Exit
1. Preheat incubator in AIR MODE appropriately for patient. Use COMFORT ZONE screen to calculate an appropriate temperature. Select temperature using the up or down switches. Press >37C button to adjust above 37C.
2. If BABY MODE desired, attach sensor to baby and plug into panel.
3. Switch to BABY MODE and select control temperature desired.
CONTINUE
DONE/EXIT
Name
Birth: 6/21/00
Wed 6/23/00
10:30 am



General Information

Timer: Select the Timer icon (clock face) to bring up the “Timer” menu screen. Select Start/Stop to start timer; select it again to stop the timer. Scroll down and select Reset to return the timer to zero. Select the Apgar Tone symbol (musical note) to activate or deactivate a tone after one minute and every 5 minutes after the timer was started. Select Done/Exit to return to the option icon screen.

Note: If the OmniBed was powered up as a warmer, this audio tone will sound as a default; if the unit was started as an incubator, the audio tone will be off as a default.



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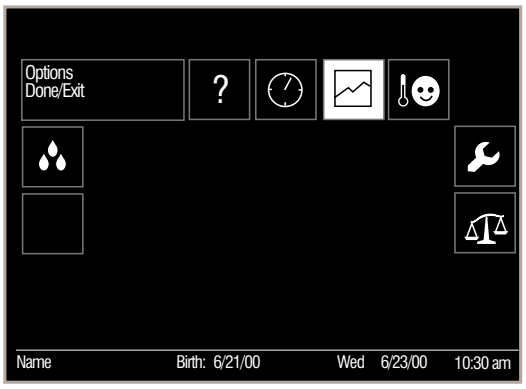
Trend: Select the Trending icon (graph) to bring up the “Trending” screen. The graph will plot temperatures from two patient skin probes (if they are installed in the jacks), the air temperature read at the compartment probe, and the set temperature entered during the time period. The graph also shows what control modes the OmniBed was in during the trended period, and heater power percentage if it was operated as a radiant warmer. By selecting “Humid” in the “Display” option the “Modes” graph is replaced by a graph plotting the percent relative humidity read by the compartment humidity sensor. Turn the knob to scroll through 2, 8, 24, or 96 hours and press it to select the desired trending time period.

Note: The trending screen does not retain data that is not currently shown on the display. For example, if you have selected that only 2 hours of data be trended, after the display has been running for 3 hours, the first hour of data is lost.



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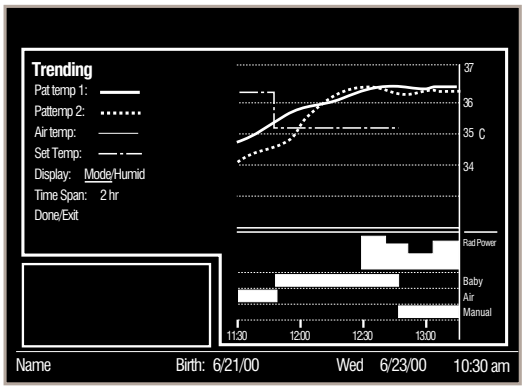

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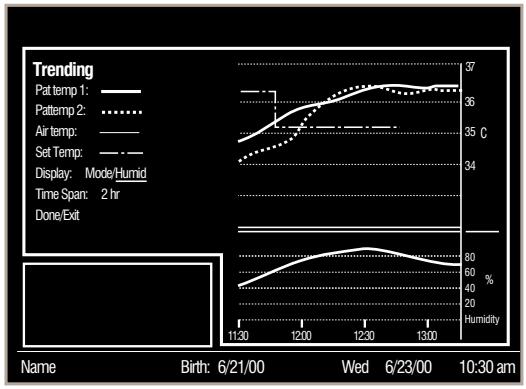

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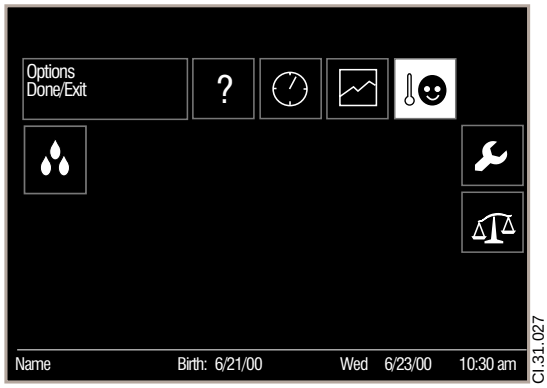
General Information



Comfort zone: Select Comfort Zone icon (thermometer and face) to bring up the “Comfort Zone” screen.

Important: The comfort zone screen is only a reference information screen used for calculating suggested temperature ranges* during air control mode from data you supply. You must manually enter the temperature settings using the buttons on the temperature regulation controls.

Push the knob to select weight then enter the patient’s weight range in grams by turning the knob in 100 gram increments.

Push the knob to enter the weight value.

Scroll to Gest age.

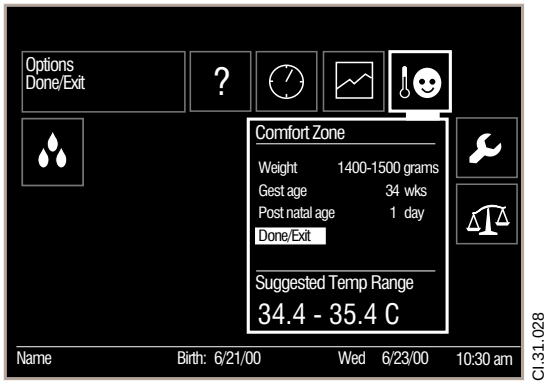
Push the knob to select Gest age then turn the knob to find the patient’s gestational age in weeks.

Push the knob to enter the gestational age value and scroll down to Post natal age.

Push the knob to select Post natal age then turn the knob to find the age in days. Push the knob to enter the postnatal age.

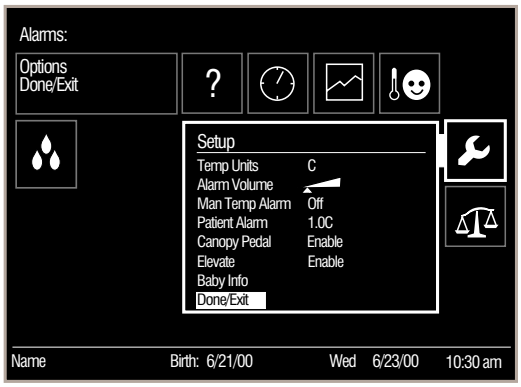
The suggested incubator air set temperature range will now appear in degrees Celsius. If you wish to use this suggested temperature setting, enter it using temperature control buttons to the left of the screen.

Select done/exit to return to the option menu screen.



* Adapted from Sauer, Dane and Visser, *Archives of Disease in Childhood*, 1984. **59**, 18-22.

General Information



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Setup/Customize: Select Setup/Customize icon (wrench) to bring up the setup screen.

Select “Temp Units” to change temperature displays from the default Celsius setting to Fahrenheit.

Select “Alarm Volume” to choose from 4 volume levels.

Select “Man Temp Alarm” to choose from 3 settings: choose “Off” to deactivate the alarm, choose “.5” to set the alarm to activate when a 0.5°C difference is read between a set temperature and the baby probe temperature, or choose “1.0” to set the alarm to activate when a 1.0°C difference is read between a set temperature and the baby probe temperature. “Off” is the default setting. The “Man Temp Alarm” can be used in either the warmer Manual mode or the incubator Air mode. However, to select a set temperature you must first select the Baby mode, input the set point, then select the Manual or Air modes.

This optional alarm provides you audiovisual notification in the Air control mode if the skin probe temperature drifts outside the range you select. For example, if you select 0.5°C on the setup screen, and then set 36.5°C as the skin temperature threshold in the Baby mode before switching to the Air mode, the alarm will sound if the baby’s skin temperature falls below 36°C or rises above 37°C while in the Air mode. If this alarm is not required, or if the skin temperature probe is not being used, “Man Temp Alarm” should always be set to “Off” on the setup screen.

Select “Patient Alarm” to choose between 2 settings: choose “.5” ” to set the alarm to activate when a 0.5°C difference is read between a set temperature and the baby probe temperature, or choose “1.0” to set the alarm to activate when a 1.0°C difference is read between a set temperature and the baby probe temperature.”1.0” is the default setting. The “Patient Alarm” is used in either the incubator or warmer Baby modes.

Select “Canopy Pedal” to disable or enable foot pedals that raise the canopy. When the pedal is disabled, the canopy can still be raised or lowered with the buttons on either side at the head of the bed.

Select “Elevate” to disable or enable the foot pedals that raise or lower the bed height.

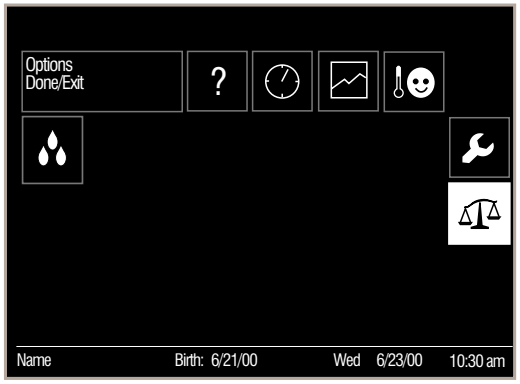
Select “Baby Info” to bring up the Baby Info screen. By turning the knob until the desired character appears and then pushing the knob, you can enter up to a 9-character name. Blanks and periods can also be selected. Selecting “← ” allows you to go back and change the previous character. Selecting “↵” enters the letters you have selected for names that are less than 9 characters long. By selecting the month, day and year numbers, you can enter the baby’s birth date.

These settings will be saved for 2 hours after power down

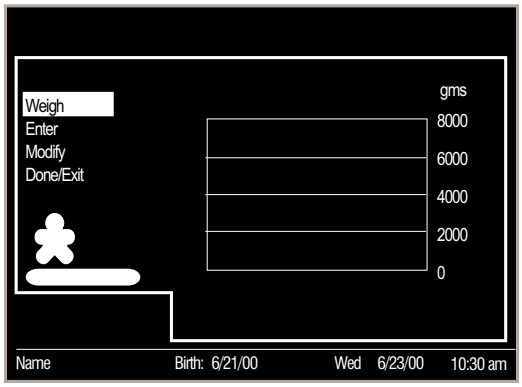
Select Done/Exit to return to the option icon screen.

Note: A service screen allows you to change preheat % power, alarm criteria, disable the canopy control pedal and other default settings. See the service manual for a description of this screen and how it may be accessed.

Scale: Available if the in-bed scale is installed. Select the Scale icon (balance scale) to bring up the scale menu screen. Select Weigh to start the weighing procedure. An audio prompt sounds and the screen will prompt you to lift the baby from the bed surface while the scale zeros. It then tells you to replace the baby on the bed and calculates the infant's weight. Select Trend to plot a series of weights on a graph. Select Modify to change to smaller increments on the Y axis, and so enlarge the differences shown between weights plotted on the graph. Select Done/Exit to return to the option icon screen.

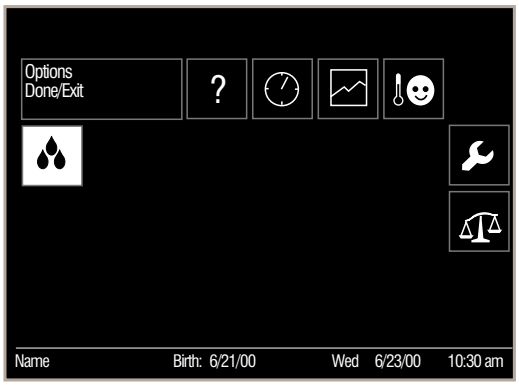


CI.31.029



CI.31.030

Servo-Humidity: Select the Humidity icon to bring up the humidity menu screen. The actual relative humidity measured inside the infant compartment is displayed in large numerals. The set relative humidity is shown in smaller numerals. Adjust the relative humidity percentage to the desired level by pushing the knob to highlight the setting. Turn the knob to increase or decrease the humidity setting then push the knob to enter the new setting. Exit the menu. The actual and set relative humidity will remain displayed. To deactivate the humidifier, set the humidity level to "off".



CI.31.032

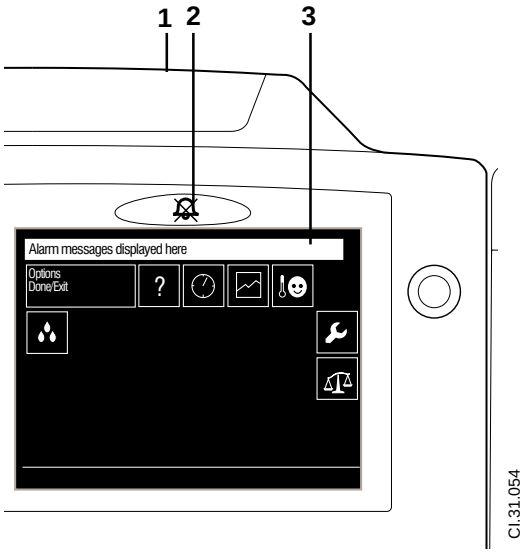
CI.31.033

Alarms

An alarm message appears across the top graphics display screen identifying the various alarm conditions. In addition, the alarm light at the top of the control panel housing activates and an audio alarm sounds.

The audio tone varies with the alarm's priority: an alternating two tone alarm indicates a critical alarm that triggers automatic heater shutdown; an intermittent single tone alarm is used for other alarms. The alarm light remains on continuously for over temperature and system failure alarms; it blinks for all other alarms.

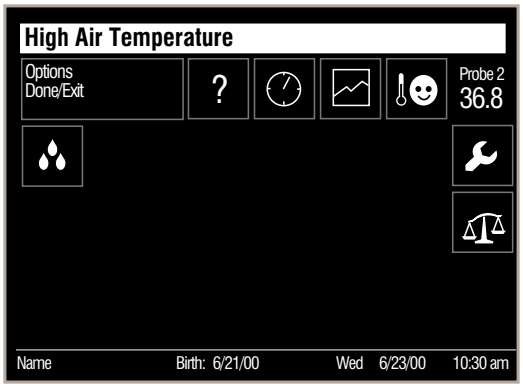
With the exception of the system failure and power failure alarms, all audio alarms can be silenced by pressing the alarm silence button located above the graphics screen. At the end of the alarm silence period the alarm reactivates if the alarm condition has not been resolved. If two or more alarm conditions occur at the same time, the audio signal for the highest priority alarm will sound while all the alarm messages will alternately appear at the top of the graphics screen. If you select the Help icon during an alarm condition, the description of that particular alarm will automatically appear on the screen.



1. *Alarm Light*
2. *Alarm Silence Button*
3. *Alarm Display*

High Air Temperature

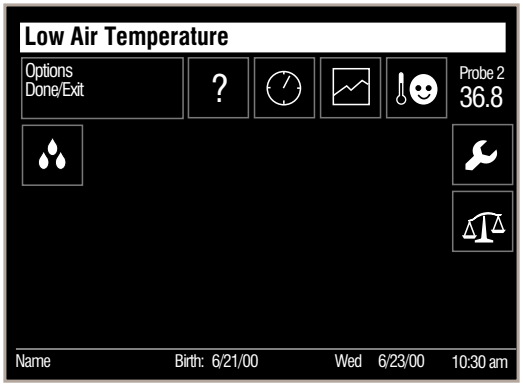
Active only when the canopy is closed and the unit is in the air mode, the High Air Temperature alarm triggers when the temperature measured by the compartment probe exceeds the air temperature you set previously by more than 1.5°C. The audio alarm is suspended for ten minutes when you push the alarm silence button. This alarm usually occurs when you have just lowered the air set temperature, or when you have changed from baby to air control mode. Monitor the unit closely to assure the air temperature decreases.



Low Air Temperature

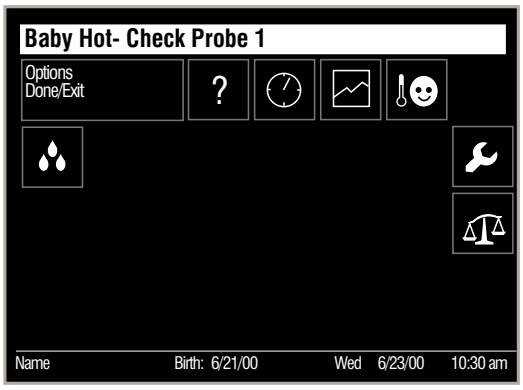
Active only when the canopy is closed and the unit is in the air mode, the Low Air Temperature alarm triggers when the temperature measured by the compartment probe falls more than 3.0°C below the air temperature you set previously. The audio alarm is suspended for a ten minute period when you push the alarm silence button. This alarm usually occurs when the doors are open without using Air Curtain Boost, when the canopy has just been lowered, or when both doors are open at the same time. Monitor the unit closely to assure the air temperature increases.

Note: The Low Temperature alarm is suspended for 60 minutes when the unit is first turned on, for 30 minutes after the canopy is closed, and 15 minutes after the set point is increased.



Baby Hot - Check Probe 1

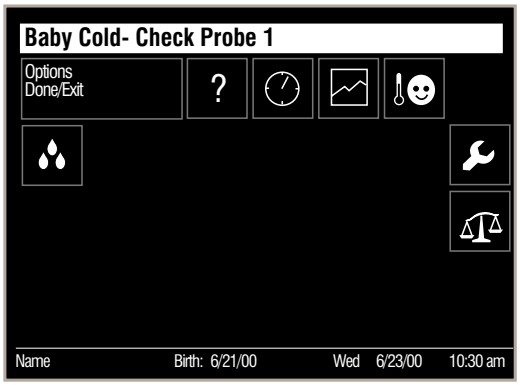
Active whenever the unit is in the baby mode, the Baby Hot alarm activates when the temperature measured by the probe on the baby skin is 1.0°C above the baby temperature you set previously (this can be adjusted to 0.5°C using the Setup/ Customize screen). Monitor the patient carefully and check the attachment of the probe on the baby's skin. The audio alarm is suspended for a ten minute period when you push the alarm silence button. This alarm can also be activated in the Manual and Air modes. See setup screen.



CI.31.036

Baby Cold - Check Probe 1

Active whenever the unit is in the baby mode, the Baby Cold alarm activates when the temperature measured by the probe on the baby skin is 1.0°C below the baby temperature you set previously (this can be adjusted to 0.5°C using the Setup/ Customize screen). Monitor the patient carefully and check the attachment of the probe on the baby's skin. The audio alarm is suspended for a ten minute period when you push the alarm silence button. This alarm can also be activated in the Manual and Air modes. See setup screen.



CI.31.037

Air Temperature Greater Than... Alarms

These alarms warn of abnormally high temperatures read by the compartment probe in all control modes and automatically shut off the heater. They are not self resetting; once the alarms are activated they must be manually reset by pushing the alarm silence button, even if the alarm condition is resolved.

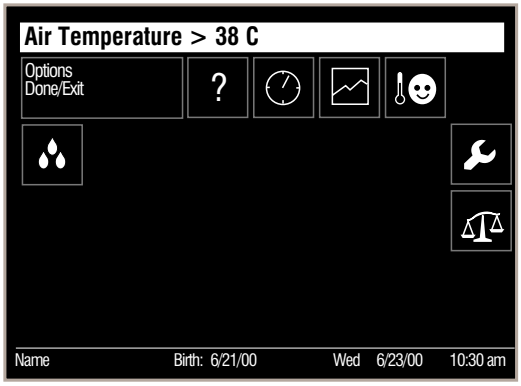
Computer independent circuitry continuously measures and compares the compartment temperature with factory set levels. Visual and audible alarms are activated and the heater shuts off if the compartment temperature exceeds these preset levels, independent of the software.

The functionality of all other alarms is continually checked by the microprocessor software during normal operation. If a fault occurs in any of this circuitry, an indicator lights and a tone is sounded.

Additionally, a computer independent "watchdog" circuit will reset the computer, turn off the heater, and activate the alarms in the event of a microprocessor failure or software error.

Air Temperature >38 C

Active only when the canopy is closed and the set temperature is below 37°C, the Air Temp >38°C alarm activates in the air mode when temperatures greater than 38°C are read by the compartment probe. This alarm may occur when you have just lowered the air set temperature, or when you have changed from baby to air control mode. Monitor the unit closely to assure the air temperature decreases.



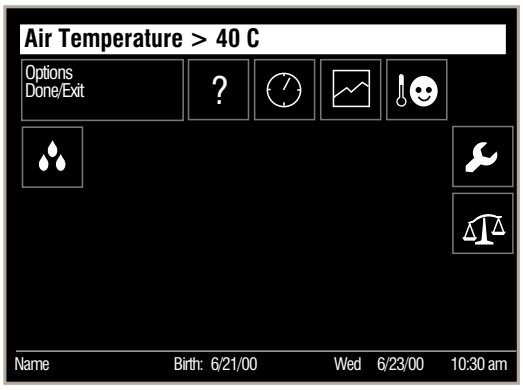
CI.31.038

General Information

Air Temperature > 40 C

In the air mode, when the air temperature is set above 37°C by using the >37°C key, the Air Temp >40°C alarm activates when temperatures greater than 40°C are read by the compartment probe.

In the baby mode, the Air Temp >40°C alarm activates whenever temperatures greater than 40°C are read by the compartment probe. Check for external heat sources on the baby (sunlight, phototherapy lamp, etc.)



CI.31.039

Disconnected Baby Probe 1

Active in all modes, the Disconnected Baby Probe alarm activates when the baby skin probe jack is unplugged at the jack panel. Check that jack is fully inserted. Check that the Man Temp Alarm has not been set in error.

CI.31.040

Fan Failure

Active only when the canopy is closed, the Fan Failure alarm triggers when the fan is missing or malfunctioning and there is inadequate air flow. The heater is automatically turned off. Remove the baby from the unit. Service required.

CI.31.041

Fan Always in High Speed

Active only when the canopy is closed, the Fan Always in High Speed alarm activates when the heater temperature sensor malfunctions.

CI.31.042

Air Probe Disconnect

Active only when the canopy is closed, the Air Probe Disconnect alarm activates when the compartment air temperature probe is disconnected. The heater is automatically turned off. Confirm connection of compartment probe to unit.

CI.31.043

Air Probe Failure

Active only when the canopy is closed, the Air Probe Failure alarm activates when the compartment air temperature probe malfunctions. The heater is automatically turned off. Remove the baby from the unit. Service required.

CI.31.044

In Transition- Heat Off

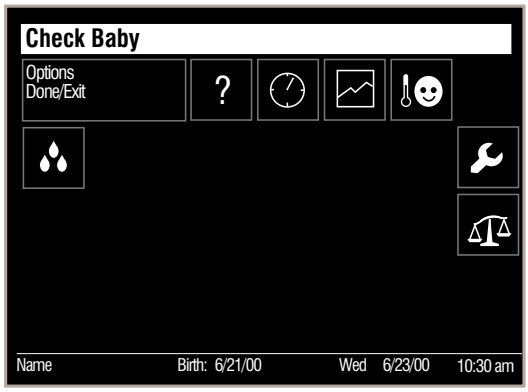
If the canopy is stopped or is prevented from reaching it's fully raised or fully closed position, this alarm activates. All heat is shut off until the canopy reaches its travel limit.

CI.31.045

Check Baby

Active only when the canopy is open, the Check Baby alarm activates when the radiant heater has been running at 100% power for more than twelve minutes. Check the attachment of the skin probe to the baby and monitor the baby's temperature closely.

When the unit is in the manual mode, the Check baby alarm activates when the radiant heater's preheat power percentage has been exceeded for more than twelve minutes. The default power setting is 25%, but this can be adjusted on the Service Screen. See the service manual for information about how this screen may be accessed. A single alarm tone sounds. After fifteen minutes, a dual tone alarm sounds, the heater is turned off automatically, and the alarm message changes to "Check Baby- Heat Off."



CI.31.046

System Failure

WARNING ⚠ **Do not use the OmniBed if the system failure alarm is activated. Remove the unit from service and refer to qualified personnel for repair.**

If an electrical failure is detected, the system failure alarm automatically shuts off the heater and triggers a two tone audio alarm that can not be silenced.

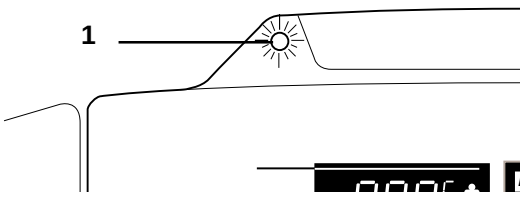
CI.31.047

Bad Membrane Switch

One of the electronic switches behind the control panel buttons has failed. This alarm can not be silenced.

Power Failure

If power to the unit is cut off, an audio alarm sounds and a LED lights.



CI.31.055

1. Power Failure Indicator

Service Alarms

The following alarm messages indicate a repair is required, but the OmniBed can be used in another operating mode, the unit need not be taken immediately out of service.

- Radiant Heater Failure- The OmniBed can stilled be used in the closed bed incubator operating mode.
- Heater Doors Not Closed- The OmniBed can still be used in the open bed warmer operating mode.
- Canopy Pedal Failure- Use the hand buttons to raise or lower the canopy.
- Bed Up Pedal Failure- A switch in the pedal is shorted. Continue to use at the current height.
- Bed Down Pedal Failure- A switch in the pedal is shorted. Continue to use at the current height.
- Bed Heater Failure- The OmniBed can still be used in the open bed warmer operating mode.
- Motor Drive Failure- The drive system for raising and lowering the canopy or raising and lowering the bed has failed. Continue to use the Omnibed in its current operating mode. The humidifier will not operate when this alarm is activated.

Option Alarms

Humidifier

Add Water- Water level low in humidifier reservoir. Add distilled water.

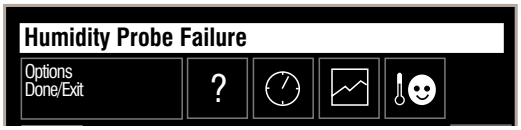
Water Reservoir Not Engaged- Humidity water reservoir missing or incorrectly installed.

Humidity Probe Failure- Probe failed; humidifier not operating. Check jack connection. Consider increasing air temperature or removing baby.

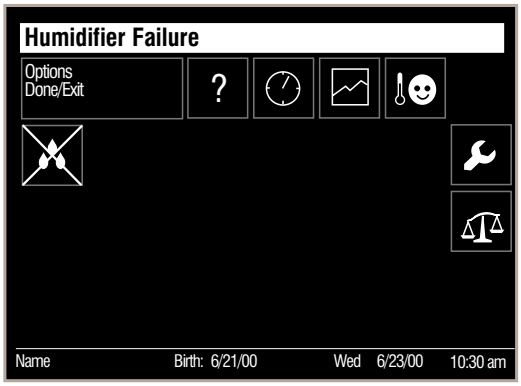
Humidity Failure- Heater failed; humidifier not operating. Repair humidifier.

CI.31.048

CI.31.049



CI.31.050



CI.31.051

Scale

Exceeds Maximum Weight- Weight on scale platform is 8 kilograms or more. Check for other objects on scale

Scale failure- System failure; note error code and remove scale from service.

CI.31.052

CI.31.053

Alarm Table

Temperature Regulation

Alarm	Activation criteria	Alarm Silence	Audio Signal	Mode	Heater Status	Inc/Wmr
High Air Temp	1.5°C over AST	10 min	2	Air	On	On/Off
Low Air Temp	3.0°C under AST	10 min	2	Air	On	On/Off
Baby Cold	1.0°C under BST*	15 min 5 min >2°C	2 1	Baby	On	On/On
Baby Hot	1.0°C over BST*	15 min 5 min >2°C	2 1	Baby	On	On/On
Disconnected Baby Probe	Disconected at jack panel	2 min	2 1 (after 30 sec)	Baby	On	On/On
Air Temp >38°C	>38°C (AST ≤37°C)	10 min	1	All	Off	On/Off
Air Temp >40°C	>40°C (AST >37°C)	10 min	1	All	Off	On/Off
Fan Failure	Fan missing or not rotating	10 min	1	All	Off	On/Off
Fan Always in High Speed	Heater temperature sensor failure	none	2	All	On	On/Off
Air Probe Disconnect	Disconnection of probe connector	10 min	2 1 (after 30 sec)	All	Off	On/On
Air Probe Failure of compartment	Failure air probe	10 min	2 1 (after 30 sec)	All	Off	On/On
Power Failure	Switch on, but no power	non-silenceable	1 2 (after 4 sec)	All	Off	On/On
System failure	any non user correctable failure	non-silenceable	1	All	Off	On/On
Check Baby	Radiant heater at 100% for 12 min	12 min	2 1 (after 15 min)	Baby	Off	On/On
	Radiant heater % above preheat set	12 min	2 1 (after 15 min)	Manual Manual	On Off	Off/On Off/On
In Transition-Heater Off	Canopy stopped in transition	10 min	2 (after 30 sec) 1 (after 2 min)	All	Off	On/On

General Information

Humidifier

Alarm	Activation criteria	Alarm Silence	Audio Signal	
Add Water	Reservoir low on water	10 min	3	
Check Water Reservoir	Reservoir missing or not fully inserted	10 min	3	
Humidity Probe Failure	Probe failed open or shorted	10 min	1	
Humidifier Failure	Failure	None	1	X appears on icon

Scale

Weight Exceeds Maximum	> 8 kg on the platform	None	None	No visual indicator
Scale failure	Failure	None	None	No visual indicator

Legend

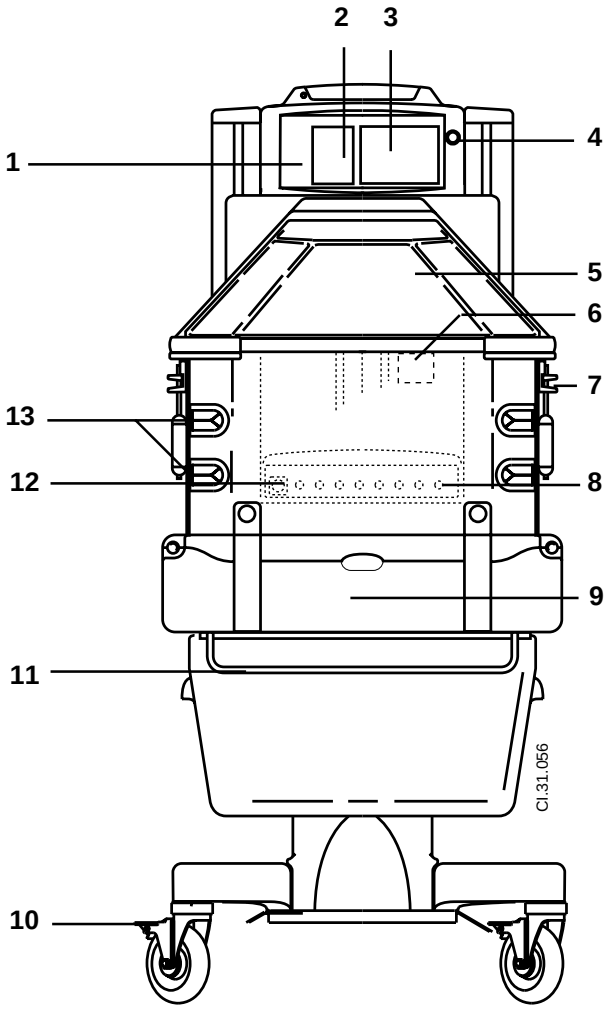
AST = Air Set Temperature

BST = Baby Set Temperature

Sounds 1 = High priority - High attention getting - e.g. two tone siren
2 = Low priority - Alert, but not requiring immediate attention - e.g. soft repeating tones with 15 to 60 seconds between soundings.
3 = Informational - Not necessarily requiring attention or not immediately - e.g. soft repeating tones with 1-5 minutes between soundings.

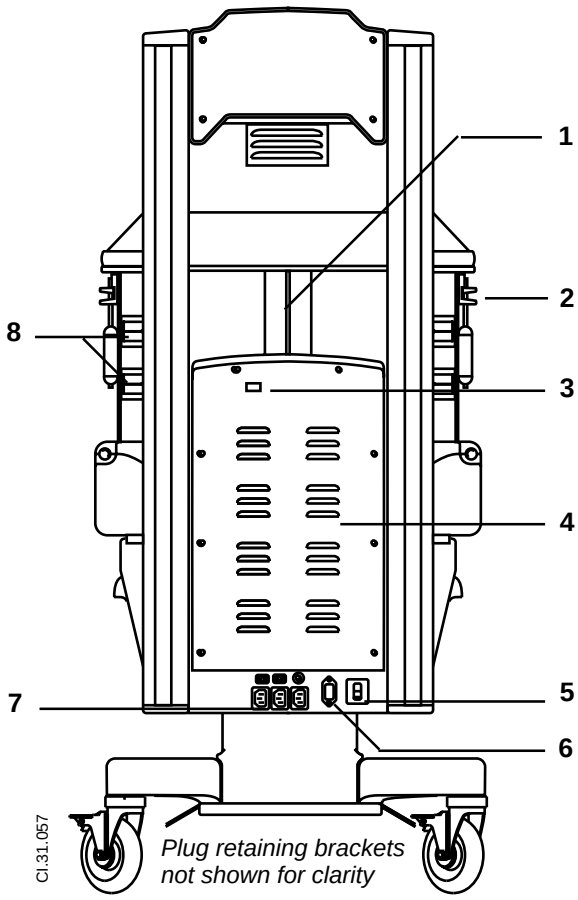
* Activation criteria can be changed to 0.5°C by the user from the Set Up/Customize screen.

Cable Connections and Mechanical Controls



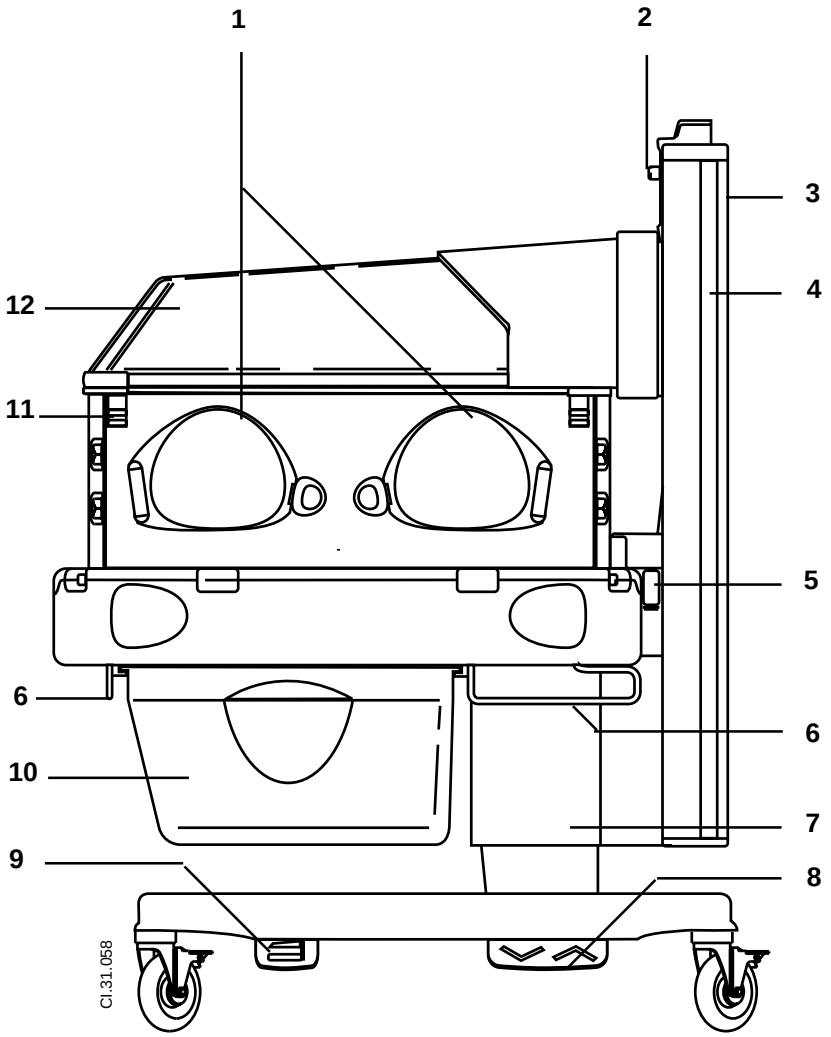
FRONT

1. *Temperature Regulation Controls*
2. *Numeric Temperature Displays*
3. *Graphics Screen*
4. *Control Knob*
5. *Canopy*
6. *Compartment Probes*
7. *Side Door Latch*
8. *Probe Jacks*
9. *Humidifier Reservoir*
10. *Caster Brake*
11. *Pleural Drainage Hanger*
12. *Standby Power Switch (I/O)*
13. *Tubing Access Covers*



BACK

1. *Ventilator Slot*
2. *Side Door Latch*
3. *RS 232 Connector*
4. *Controller Cover*
5. *Mains Power Switch*
6. *Power Cord Inlet*
7. *Accessory Power Outlets*
8. *Tubing Access Covers*



1. *Portholes*
2. *Control Panel*
3. *Upright*
4. *Dovetail rail*
5. *Canopy Raise/Lower Switches*
6. *Pleural Drainage Hanger*
7. *Elevating Column*
8. *Bed Height Pedal*
9. *Raise Canopy Pedal*
10. *Storage Drawer*
11. *Side Door Latch*
12. *Canopy*

SIDE

Notes

Preoperative Checkout Procedure

Setup

Your OmniBed has been shipped to you with the canopy in the locked down position. Before the canopy can be raised the rail locks must be released. They are located in both sides of the OmniBed near the outside bottom of the uprights. An orange tear-away label marks their location. The lock consists of a socket head cap screw in a slot. Tightening the screw disengages the screw head from the slot and releases the lift rail. Using the 4mm hex key provided with the unit, turn the screw clockwise about 8 rotations until the screw securely seats in its hole. Remove the tear away label.

Mechanical checks

WARNINGS

⚠ Before using the OmniBed, read this entire manual. Attempting to use device without a thorough understanding of its operation may result in patient or user injury.

⚠ Do not perform the preoperative checkout procedure while the patient occupies the unit.

⚠ Complete the preoperative checkout procedure section of this manual before putting the unit into operation. If the equipment fails any portion of the checkout procedure it must be removed from use and repaired.

1. Disconnect the power cord for the mechanical portion of the preoperative checkout procedure.
2. Examine the power cord for any signs of damage. Replace the cord if damage is evident.
3. Check that both plug retaining brackets are in place.
4. Examine the unit overall for any damaged or missing parts.
5. Check that all the casters are in firm contact with the floor and that the unit is stable. Lock the caster brakes and check that they hold the unit in place. Release the brakes and check that the unit moves smoothly.
6. Check the operation of the two side doors. Open the doors and check that they swing all the way down and hang perpendicular to the bed. Check that the doors are securely attached to the unit and that the hinge pins are properly seated. Check that the inner walls are securely fastened to the doors. Close the doors and check that the latches hold the doors securely shut. The red latch open indicators should not be visible when the latches are engaged. Check that the top of the doors meet the canopy seal.
7. Check the portholes. Open the portholes by pressing on the latch. The cover should swing open. Close the porthole and check that the latch holds the cover securely shut and that the cover seals tightly against the porthole gasket. Check that all the porthole seals are in place and are in good condition.

8. If the unit is equipped with an iris porthole, check that the iris is installed and in good condition. Check that the iris tightens when it is rotated.
9. Check that the tubing access covers in the four bed corners and the large slot grommet at the head of the bed are in place and are in good condition.
10. Check the operation of the bed. The bed surface should rotate easily without binding. If the bed is properly seated and locked in place, the mattress should be level. When the bed is rotated back into the straight position, check to see that the bed platform extends and stops when it is pulled out on either side. Check the operation of the bed tilt mechanism. When you squeeze the tilt control and push down on the foot of the bed the head of the bed should raise easily, and should stay in position at any angle along its tilt path when you let go of the tilt control. When you push down the head of the bed the foot of the bed should raise smoothly, and should stay in position at any angle along its tilt path when you let go of the tilt control.

Controller checks

WARNING ⚠ **Do not use the OmniBed in the presence of flammable anesthetics: an explosion hazard exists under these conditions.**

1. Make sure the power cord is connected to the outlet on the unit and to the rated power supply.
2. Connect the baby probe to jack 1 on the jack panel at the head of the bed.
3. Switch on the power at the mains switch on the back of the unit, and at the standby switch on the jack panel. Verify the following:
   - All the displays and indicators light
   - The software revision appears
   - The prompt tone begins

Note: If the unit has been used in the last 2 hours, the patient history query also appears.

4. Adjust the set temperature to silence the prompt tone.
5. Check the patient probe. Warm it by placing it between your fingers, and verify that the baby temperature reading increases.

Note: If the probe temperature is below 30°C, the display will show -L-. If the unit is in the Baby Mode, there will also be a Baby Cold alarm.

6. Unplug the patient probe and check that both visual and audio alarms trigger in the Baby mode.
7. Check the canopy lift mechanism. Push the raise canopy pedal and verify the canopy moves smoothly in one continuous movement to its upper limit, the heater doors open, and the unit shifts into warmer operation. Check that the canopy pedals on both sides of the unit raise the canopy.

8. With the canopy raised, check the operation of the side panel at the foot of the bed. Check that after you lift up on the side panel, it swings down and hangs perpendicular to the bed. Check that the side panel is securely attached. Check that it swings back up and seats in the closed position.

9. Lower the canopy and verify that it stops when you remove your finger from the hand switch. Check that it stops automatically at its lower limit,that the canopy seal makes contact with all four bed sides, and that the unit shifts into incubator operation. Check that the raise and lower buttons at the head of the bed on both sides of the unit raise and lower the canopy.

10. Check the operation of the bed elevating system. Raise and lower the bed along its entire travel range, checking that the mechanism operates smoothly. Check that the raise and lower bed pedals on both sides of the unit raise and lower the bed height.

11. Check the power failure alarm and the battery backed up memory. Make note of the current control mode and temperature settings and wait one minute, then unplug the OmniBed from the wall outlet. An alarm should sound and the power failure indicator should light. Wait one to two minutes and plug the OmniBed back in. Verify that the alarm cancels and that the OmniBed returns to the same control mode and temperature settings it displayed before the power interruption.

    Note: A fully charged battery should supply the power failure alarm for approximately 10 minutes. If the alarm is tested for the full 10 minutes the OmniBed must be run at least two hours to recharge the battery before it is used with a patient. Total recharge time is 8 to 10 hours.

Accessory checks

1. Check that all accessories are securely mounted.

2. Check the operation of any accessories with reference to their appropriate operation manuals.

3. Setup any required suction or gas supply systems. Check them for leaks as described in their respective operation manuals.

Notes

Operating the OmniBed

Basic Operating Procedure

WARNING

⚠ Always set the brakes before placing a patient in the unit.

⚠ Do not leave the patient unattended when using the OmniBed. Check the patient's temperature periodically to ensure the comfort and the safety of the patient. If the warmer is used for an extended time, it is recommended that the baby control mode be used. When an alarm is silenced, close monitoring of the patient's condition is required.

⚠ Use of electrosurgical units or other electrical field radiating equipment can affect the operation of the unit. Keep the patient probe lead as far away as possible from electrosurgical cables. Do not allow excess electrical cables to be laid on the bed platform. Use of electrosurgical units or other instruments which radiate electrical fields can cause indirect heating, by several tenths of a degree of the skin temperature probe due to absorbed electrical energy. When using these devices near the radiant warmer, operate the warmer in manual mode for maximum safety.

⚠ The use of phototherapy equipment may raise the patient's temperature.

⚠ Radiant warmers increase an infant's insensible water loss. Take appropriate measures to maintain the patient's fluid balance while caring for them in a radiant warmer.

⚠ Radiant energy can adversely affect blood components. When using intravenous tubing systems for delivery of blood components to patients occupying a warmer, shield any tubing with aluminum foil.

⚠ When using as a radiant warmer, change the patient's diapers frequently. Radiant energy causes more rapid urine evaporation, and may lead to inaccurate urine diagnosis test analysis and inaccurate weight measurements.

⚠ **When operating as a radiant warmer, use the baby mode unless the manual mode is specifically prescribed. While both modes require patient monitoring, the manual mode requires constant attention. In the manual mode, you must take the responsibility for detecting changes in the environment (drafts, direct sunlight, phototherapy lamp usage, etc.) or the patient condition requiring heater adjustments in response to these changes. In the baby mode, the warmer automatically adjusts heater output to maintain the desired skin temperature, reducing (but not eliminating) the need to monitor the patient and make adjustments to the equipment.**

⚠ **Using an OmniBed with a fan motor that has worn parts can produce unacceptable noise levels within the infant compartment.**

⚠ **Direct sunlight or other radiant heat sources can cause an increase in OmniBed temperature to dangerous levels.**

⚠ **Do not leave the baby unattended while any side panels are lowered or removed.**

⚠ **Do not place objects on top of the canopy. When the canopy is raised, objects could fall off and injure the operator. Do not route leads or tubing over the top of the canopy or tape leads or tubing to the canopy, since raising the canopy could pull leads and tubing from patient or equipment connections. Always check for accessories or objects that could be in the canopy's path before raising or lowering the canopy.**

CAUTIONS

⚠ Proper temperature control depends on continuous, unobstructed air circulation. Do not cover air circulation openings around the bed as obstruction will result in loss of air circulation, loss of heat, and carbon dioxide buildup.

⚠ Do not mount or rest a radiant warmer or incandescent light on or over the OmniBed; ineffective heating and damage to the canopy may result. If using incandescent phototherapy lamps, check manufacturer's recommended minimum distance to equipment.

1. Plug the unit into a properly rated AC power outlet and set the caster brakes.
2. Place the mains power switch, located by the outlets on the back of the unit, in the On (I) position.
3. Place the power Stand By switch, located on the left side of the jack panel, in the On (I) position.
4. Depending on whether the unit is to be used as an incubator or as a warmer, raise or lower the canopy using the hand switches located on either side of the bed near the uprights.

5. Check the following:
   - All LED segments and Screen pixels light, then go blank
   - All installed options appear on graphics screen
   - Patient history query appears
   - Operator prompt sounds

WARNING ⚠ **The patient probe is not isolated from earth ground. Any additional equipment used with the Giraffe OmniBed must comply with IEC 601.**

Operation as an Incubator

Always preheat the bed before placing the baby in the bed.

1. Select air control mode. If the baby mode is desired, preheat the bed in air mode. A suggested thermal neutral temperature can be calculated using the comfort zone screen.
2. Select a temperature setting using the temperature/power buttons.
3. Place the baby in the bed.
4. For baby mode operation, connect the skin temperature probe to probe jack 1. In the air mode, use a probe only if you wish to display the patient skin temperature. See “Attaching the Skin Temperature Probe” later in this section.
5. If baby mode is desired, press the Baby mode button.
6. Select a temperature setting using the temperature/power buttons.

Operation as a Warmer

Always preheat the bed before placing the baby in the bed.

1. Select a control mode (manual mode is the default). Preheat the bed in the manual mode. Power settings in the preheat range can be set without causing a check patient alarm. The preheat range is factory set at 0 to 25%. This range can be changed on the service screen.

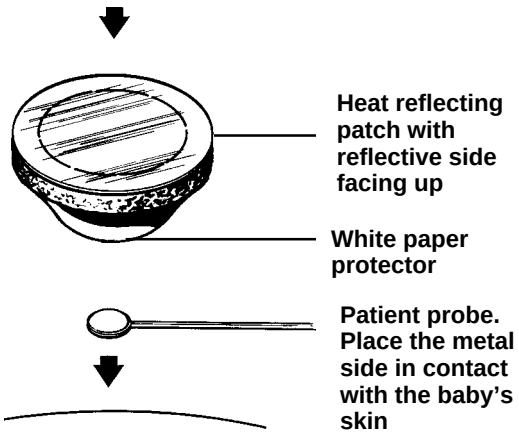
   If you start with the canopy open, or open the bed during the first minute after start up, and you do not select a control mode, or enter a percentage power setting the graphics screen will show the “Warm Up Mode” message and the radiant heater will automatically run at 100% power. When ten minutes has elapsed and you still have not selected a control mode, the graphics display will show the “Preheat Zone” message and the radiant heater will then run at the maximum preheat level.
2. Select power percentage setting using the temperature/power buttons.
3. Place the baby in the bed.
4. For baby mode operation, connect the skin temperature probe to probe jack 1. In the manual mode, use a probe only if you wish to display the patient skin temperature. See “Attaching the Skin Temperature Probe” later in this section.
5. If baby mode is desired, press the Baby mode button.
6. Select a temperature setting using the temperature/power buttons.

Attaching the Skin Temperature Probe

1. Place the skin probe on the baby's skin. If the baby is prone, place the probe on the baby's back. Make sure the baby's skin is clean and dry before applying the probe. If you are using the OmniBed as a warmer, the probe must be directly in the path of the radiant heat. Doing any of the following may result in under or over heating the baby:
   - Do **not** place the probe between the baby and the mattress- inaccurate readings will result.
   - Do **not** remove the reflective foil from the disposable probe or reflective patch. Do **not** use a probe without a reflective patch. Replace the patch when repositioning the probe or when adhesive strength degrades.
   - Do **not** pull on the probe wire. Remove the probe from the skin by gently pulling on the adhesive patch. Remove the probe from the jack panel by grasping the plug at the panel.
   - Regularly check that the probe is attached- if the probe is **not** in contact with the baby's skin inaccurate readings will result.
   - Only use Ohmeda Medical probes; other manufacturers probes are **not** calibrated to Ohmeda Medical equipment. Using probes from other manufacturers may cause inaccurate temperature readings, may not comply with safety standards, and will void your Ohmeda Medical equipment warranty.
   - When using phototherapy lamps, the probe must be directly in the path of the radiant heat of the lamp; do **not** place the probe in an area shielded from the lamp's light. The phototherapy lamp may raise the baby's skin temperature.
   - Do **not** use rectal temperatures to control the baby's temperature.
   - Do not remove the probe from its storage bag until required for use. Replace the probe if the cable or tip becomes damaged.
2. To attach the disposable probe (single use only), peel the paper backing from the adhesive side and apply to the baby's skin, with the reflective foil side up.

   To attach the reusable probe, use the heat reflecting patch. Place the metal side of the probe against the baby's skin, peel the paper backing from the adhesive side of the patch and place the patch over the probe with the reflective foil side up.
3. Route the probe wire through the tubing access covers at the corners of the bed sides or through the ventilator slot in the back side wall.
4. Plug the probe wire into the jack panel.

   Note: The OmniBed cannot differentiate between an increase in core temperature with cold skin (fever), and low core and skin temperatures (hypothermia). Patient temperature should be verified with an axillary thermometer.


Heat reflecting patch with reflective side facing up
White paper protector
Patient probe. Place the metal side in contact with the baby's skin

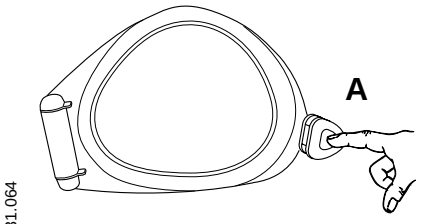
The disposable probe comes with the heat reflecting pad attached

Additional Operating procedures

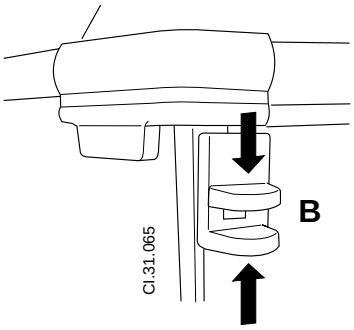
WARNING ⚠ **When opening or closing the doors or portholes, make sure the infant, any clothing, monitoring leads, tubing, etc., are completely within the confines of the bed. Inspect all patient connected tubes or leads before and after sliding out, rotating, tilting, raising or lowering the bed. Moving the bed can pull on leads and tubing which may disconnect tubes or leads, restrict gas or liquid flow, or move probes out of position.**

Accessing the baby

To open the porthole, push the release button **(A)** and the porthole will swing open.



To open the side door, pinch the latches together **(B)** to draw back the bolts and lower the door.



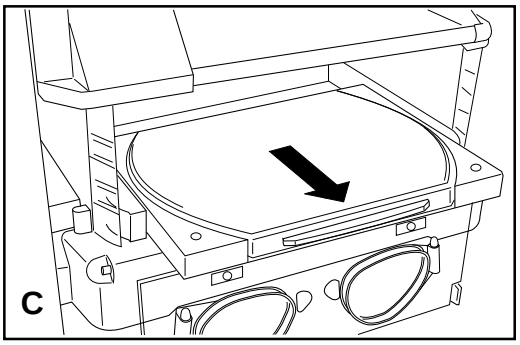
To slide out the mattress tray, first make sure the bed is level and grasp it by one of the holes. Pull the bed out toward you until it stops **(C)**.

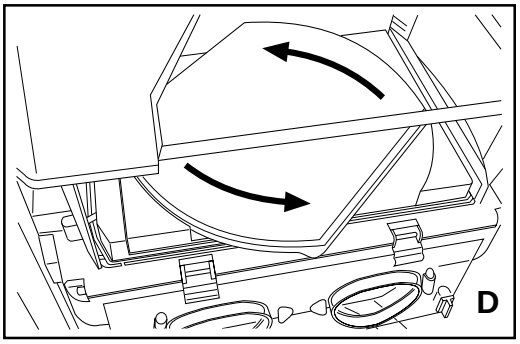
To further access the baby, the mattress tray can be rotated in either direction by grasping it's edge and turning it **(D)**. However, the mattress tray must be pulled out or both doors must first be lowered before the bed can rotate freely.

To raise the canopy, press the foot pedal or the switches at the side of the bed near the uprights.

To lower the panel at the foot of the bed, pull it straight up and then swing it out until it hangs vertically below the bed.

Note: The side panel at the foot of the bed can only be raised or lowered when the canopy is raised.





Raising the Canopy

To allow immediate access to the baby when the OmniBed is being used as an incubator, one touch of the foot pedal, or the canopy up switch at the head of the bed, raises the canopy to its upper travel limit in one uninterrupted movement. Touching the pedal or switch a second time while the canopy is raising will stop upward movement.

To lower the canopy, press and hold the canopy down switch at the head of the bed. If you remove your finger from the switch, downward movement stops.

Note: The canopy foot pedal can only be used to raise the canopy; the switch at the head of the bed must be used to lower the canopy.

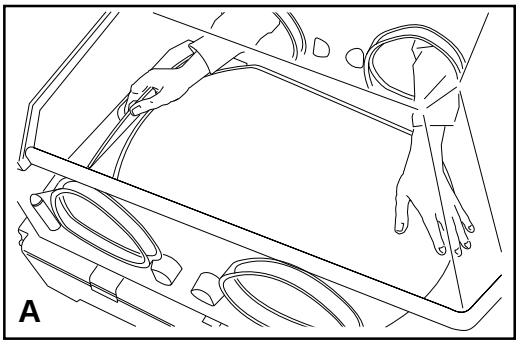
Raising and lowering the bed

WARNING ⚠ **Before raising or lowering the bed, check that there is adequate slack in tubing and leads and that no obstructions limit the range of motion.**

The bed can be raised or lowered using the bed height pedals located on the legs on either side of the OmniBed. The bed height can be adjusted low enough for use by a seated caregiver, or can be raised high enough for procedures preformed by standing caregivers.

Tilting the bed

The bed tilts twelve degrees to allow feet up or head up positioning of the baby. The tilt release is located inside the bed area at the head of the bed. Pinch it closed to release it with one hand while placing the other hand on the foot of the bed to control tilt speed **(A)**. The bed rocks at its center like a seesaw, so pushing down on one end raises the other. Letting go of the release at any point on the tilt path locks the bed in that position.



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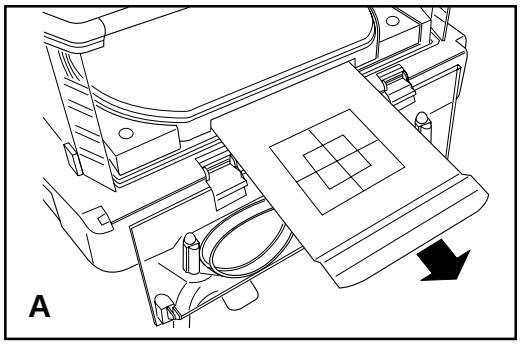
Using the X-ray tray

Raise the canopy and place a film cassette on the tray that slides out from under the mattress for X-ray procedures. The tray slides out on either side of the bed **(A)**. The cassette can be slid into the cavity under the mattress without moving the baby. X-rays may be taken with canopy up or down.



Administering oxygen

WARNINGS

⚠ To administer free flow oxygen within the infant compartment, use only a servo-controlled oxygen delivery system. If a servo-controlled oxygen system is not used, variations in fan speed may cause unexpected changes in O_2 levels.

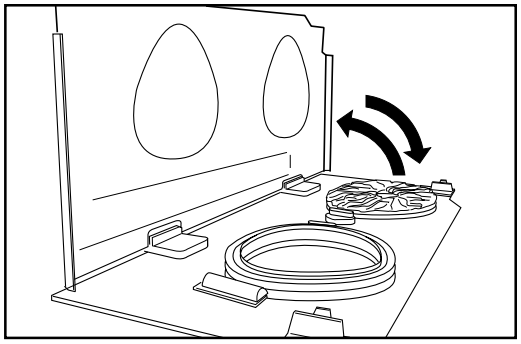
⚠ Additional oxygen should only be administered under the direction of qualified medical personnel.

⚠ The use of head boxes, hoods and oxygen inlets can increase the noise level inside the OmniBed.

⚠ Remove all sources of ignition including smoking materials, and sources of electrical discharge from the area when oxygen is in use. In the presence of high oxygen concentrations, even relatively nonflammable items can ignite and burn rapidly. Do not place auxiliary equipment producing sparks inside the incubator. Even small quantities of highly flammable items (such as organic cleaning solvents) may explode.

Installing wristlets

Unlike other incubators you may have used, Giraffe porthole wristlets are installed on the inside of the porthole, between the porthole and the inner wall. First open the side door by pinching the latches and lowering the door, then push out on the tabs on the back of the door latches to release the top of the inner wall. Swing the wall away from the door. Stretch the larger elastic band on wristlet around the rim of the porthole seal so that it fits into the groove behind the rim, then swing the inner wall back so it snaps into the locked position to secure the wristlet in place. Close the side door.



Using the humidifier

WARNING ⚠ **Allow the heater cylinder to cool about ten minutes before removing the reservoir.**

The OmniBed servo-humidifier maintains a selected humidity percentage relative to readings from a humidity sensor in the infant compartment.

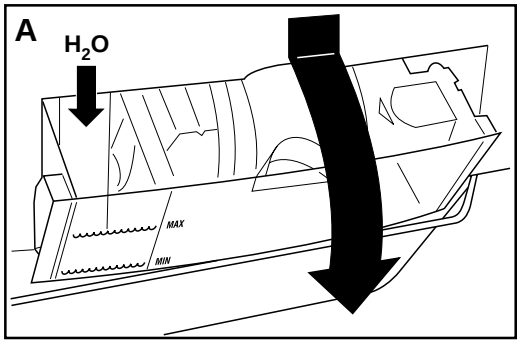
The water reservoir should always be in place when you use the OmniBed. Always use distilled water to fill the reservoir. The reservoir holds a little more than a liter of water.

To fill the reservoir, grasp it and push down **(A)**; the reservoir will tilt open for filling. Fill to the fill line on the heater cylinder, not the line on the reservoir. Tilt the reservoir back into place.

Use the Humidifier screen on the graphics display to start humidification and set a desired humidity level. See accessory options in chapter 1 for a description of how the humidifier control screen works.

To remove the reservoir, grasp the bottom of the reservoir and pull it away from the bed, then lower the reservoir down away from the unit **(B)**. Hold the reservoir under the heater cylinder for a few seconds to allow the water in the cylinder to drain back into the reservoir.

Drain the humidifier reservoir when the unit is not in use. Disinfect the reservoir weekly or after each patient. Refer to the section “Cleaning and disinfecting individual components” in chapter 4 for disinfection instructions.



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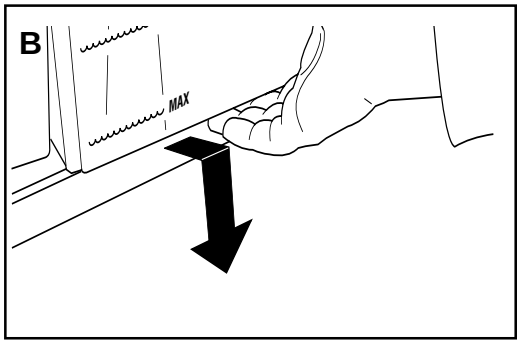

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Note: Do not fill the humidifier past the fill level. Filling past the fill level actually DECREASES humidification.

ThermaLink option

The ThermaLink Serial data interface and Nurse Call connections are options offered with the OmniBed. Your unit has these features if there is a nine pin connector on the back of the controller, near the top of the electrical enclosure cover.

Using the Serial Data interface

WARNING ⚠ **Remote monitoring does not replace the need for direct patient observation by qualified medical personnel.**

The ThermaLink serial data output can be used with a computer or a commercial RS-232 monitor. Because of the wide variety of applications and systems, detailed information on decoding the data stream appears in the appendix. For details of the RS-232 protocol and the connector pinout, refer to the Specification section.

WARNING ⚠ **The computer or RS-232 monitor's user program must continuously check the data link. The program should constantly verify connection to theOmniBed controller and check for updated data.**

Using the Nurse Call System interface

WARNINGS ⚠ **Remote monitoring does not replace the need for direct patient observation by qualified medical personnel.**

⚠ **If you connect the Nurse Call output to system which uses the normally open connection, a disconnected Nurse Call cable will not trigger an alarm.**

The Nurse Call connector lets you use the OmniBed with your current remote alarm system. Nurse Call alarms trigger for:

- Patient Temperature Alarms
- Control Temperature Alarms
- High Air Temperature Alarms
- Air Circulation Alarms
- Probe Failure Alarms
- System Failure Alarms

The Nurse Call alarms works with the OmniBed's audible alarm. Silencing the audible alarm on the OmniBed stops the Nurse Call alarm even if the alarm condition still exists. At the end of the silence period, the Nurse Call alarm and the audible alarm reactivate unless the condition has been resolved. The alarm silence period ends prematurely if another alarm triggers.

Refer to the Appendix for additional information on Nurse Call connections.

Nurse Call checkout:

1. Complete the basic operating procedure in chapter 3.
2. Verify proper operation of the Nurse Call station.
3. Connect the Nurse Call connector to the OmniBed.
4. Unplug the unit to trigger an alarm. Verify that you also get an alarm at the Nurse Call station.

   Note: Any power interruption (switching off the unit, accidentally unplugging the power cord, etc.) triggers a Nurse Call alarm.

Using the In-Bed Scale

The OmniBed can be equipped with its own in-bed scale that is operated from the graphics screen. See accessory options in chapter 1 for information about the scale menu screens work.

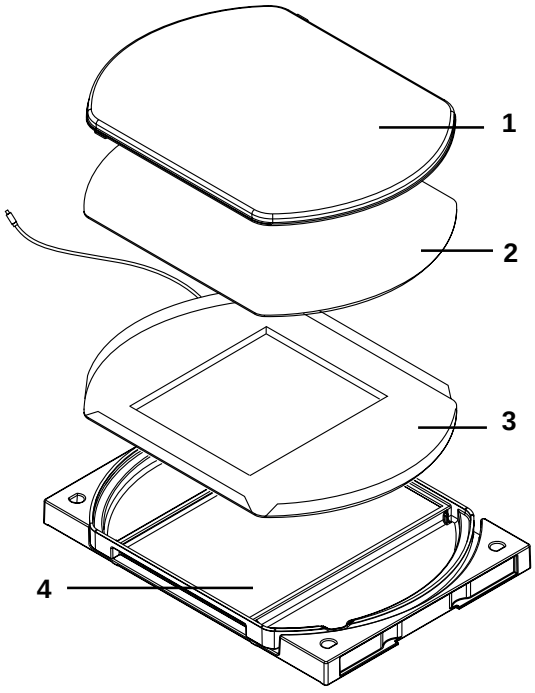
Scale installation

1. Remove the clear plate and mattress from the bed.
2. Fit the scale weighing platform into the recesses in the bed.
3. Route the scale cable though a tubing access cover or the ventilator slot and plug the connector into the jack panel.
4. Place the clear plate and mattress on the weighing platform. Make sure they are properly seated on the platform.

Weighing procedure

The baby should be in approximately the center of the bed. Stuffed animals and other objects should not lean against side walls. All leads, I.V. tubes and ventilator tubes should be secured. Blankets may be tucked under the mattress, but must not be tucked under the weighing platform.

1. Make sure the bed tilt platform is completely level; if the scale is tilted it will effect weighing accuracy.
2. Select the scale icon options display to bring up the scale menu. If the scale is not connected, no icon will appear.
3. Select weigh from the menu to initiate weighing.
4. In order to "zero" the scale, the display will prompt you to lift the baby by showing the "Lift Baby" icon while a tone sounds. Lift the baby and any tubing or leads attached to the baby. Make sure that arms, legs, blankets, and clothing are clear of the mattress.



1. *Mattress pad*
2. *Clear plate*
3. *Scale*
4. *Bed*

5. Hold the baby until the second tone sounds and the “Replace Baby” icon appears on the screen. Place the baby back down on the mattress while holding up any leads or tubes attached to the baby. The scale will now calculate the baby’s weight which will appear in the display.

   Note: The scale weighs any object on the platform, so if you replace the baby without holding up lead and tubes, the weight of the leads and tubes will be included with the baby’s weight.

Mounting accessories

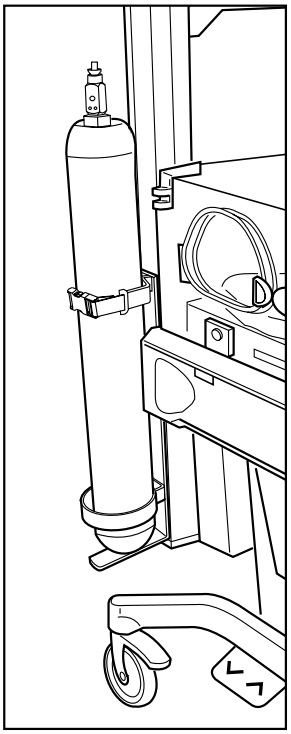
WARNING ⚠ **Overloading the shelves and accessory rails can affect the stability of the unit. Always try to evenly distribute the weight of accessories on both sides of the unit for a more balanced load. Limit the load on the outside of each upright to 18 kg. Do not mount shelves to the outside dovetail rail more than 137 cm from the floor.**

Rail system components mount to the uprights and provide access to commonly used equipment such as suction regulators, flowmeters, collection bottles, instrument shelves, etc.

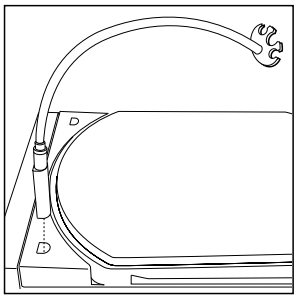
1. Loosen the mounting screw on the mounting block.
2. Place the mounting block in position on the rail.
3. Tighten the mounting screw.
4. Release the rail system component by loosening the mounting screw.

Gas Cylinder Holder

The gas cylinder holder may be mounted on the outside or the back of the dove tail accessory rails. Slide the holder down from the top of the dovetail rail and secure it by tightening the mounting nuts. On Giraffe models with the elevating bed height option, always lower the bed to its lowest position before mounting the holder to ensure adequate clearance with the caster legs and the floor. Carefully place the cylinder in the holder and secure it with the nylon straps.



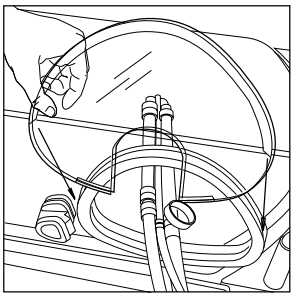
Tubing Management Arm



The flexible tubing management arm aids in routing tubing to the baby. It can be mounted by inserting it in any of the 4 “D” shaped holes located at each of the bed corners. The slots and holes in the tubing holder at the end of the arm accommodate tubing of various sizes.

Note: The tubing management arm is designed for tubing only, and will not support loads greater than 200 g.

Oscillator Port Cover



Use an oscillator port cover to close a port when the large tubing of an oscillator is routed through it. A rim at the top of the cover fits into the outer lip of the porthole seal, while tabs on either side of the tubing slot fit under the seal lip to hold the cover in position.

Maintaining the OmniBed

WARNINGS

⚠ **The heater is hot enough to cause skin burns. Unplug the unit and allow the heater to cool before disassembly or cleaning.**

⚠ **Always disconnect the power before performing service or maintenance procedures detailed in this manual. Apply power only if you are specifically instructed to do so as part of the procedure.**

⚠ **Thoroughly air dry the unit after cleaning with flammable agents. Small amounts of flammable agents, such as ether, alcohol or similar cleaning solvents left in the unit can cause a fire.**

⚠ **Never oil or grease oxygen equipment unless a lubricant that is made and approved for this type of service is used. Oils and grease oxidize readily, and in the presence of oxygen, will burn violently.**

Repair Policy

Warranty repair and service must be performed by an Ohmeda Medical Service Representative or at the Ohmeda Medical Service and Distribution Center. To contact an Ohmeda Medical Service Representative, call the your Ohmeda Medical Service Office listed on the back cover.

Do not use malfunctioning equipment. Make all necessary repairs or have the equipment repaired by an Ohmeda Medical Service Representative. Parts listed in the service manual, for this product, may be repaired or replaced by a competent, trained person who has experience in repairing devices of this nature. After repair, test the equipment to ascertain that it complies with the published specifications.

CAUTION

⚠ Detailed information for more extensive repairs is included in the service manual solely for the convenience of users having proper knowledge, tools and test equipment, and for service representatives trained by Ohmeda Medical.

Maintenance schedule

The unit should be maintained in accordance with the procedures detailed in the Service Manual. Service maintenance must be performed by a technically competent individual.

Operator maintenance

This schedule lists the minimum frequencies. Always follow hospital and local regulations for required frequencies.

Weekly or After Each Patient

Disinfect the humidifier if used.

Clean the incubator and check the air filter. Disinfect the incubator if required or after use with infectious patients.

Quarterly

Replace the air filter (located behind the humidifier reservoir). When you replace the filter, mark the date on the label supplied with the replacement filter and affix it to the filter cover panel.

Note: This is the minimum replacement frequency. The filter must also be replaced whenever it appears dirty, or has been used with an infectious patient.

Service maintenance

This schedule lists the minimum frequencies. Always follow hospital and local regulations for required frequencies.

Annually

Perform the electrical safety and calibration procedure as described in the service manual.

Calibrate the scale as described in the service manual.

Every Two Years

Replace the battery.

Note: The battery is used to sound the power failure alarm and to power memory circuits during a power failure.

Every Three Years

Calibrate the humidifier as described in the service manual.

Disassembling the OmniBed for a complete cleaning

If the OmniBed has been exposed to body fluids, check your hospital's infection control procedures. You may need to wear protective clothing and eye wear or use special sterilization agents and cleaning procedures.

1. Raise the canopy to it's top travel limit.

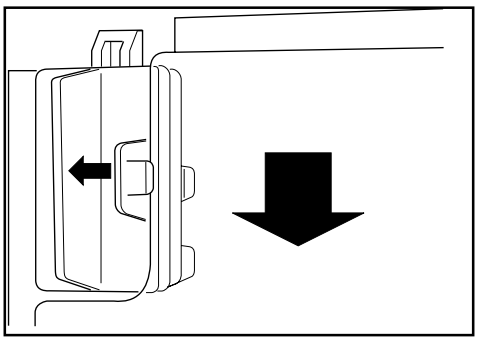
WARNING ⚠ **Disconnect the power cord before disassembling or reassembling the lower unit.**

CAUTIONS ⚠ Electronic devices in the microprocessor controller are susceptible to damage from discharges of static electricity. These devices are adequately protected, but can be damaged if the unit is disassembled beyond that recommended for cleaning and maintenance.

⚠ Do not remove the air temperature probe mounted to the rear wall; the air temperature probe must remain in the correct position for proper operation.

2. Turn the power switch Off and unplug the unit from the power outlet.
3. If the OmniBed was previously on, allow it to cool for at least 30 minutes.
4. Unplug the patient probe and any other probe jacks or connectors from the jack panel.
5. Open the side doors by squeezing the latches located at the top corners of each door. To remove the inner wall, push out on the tabs on the back of the door latches to release the top of the wall **(A),** then rotate the inner wall down until it slides directly out of the door hinges **(B)**.
6. Remove the side doors by pushing in on either of the spring loaded buttons located at the bottom corners of the door **(C)** and lifting the door out of its hinges **(D)**.
7. Lower the wall at the foot of the bed by lifting the wall directly up, then allowing to rotate forward and down.
8. Because of the compartment probe connection, the wall at the head of the bed can not be completely removed. Lift the wall up from the center. The wall will stop approximately 4 cm up to allow cleaning underneath it.
9. Remove the porthole seals and irises.

A



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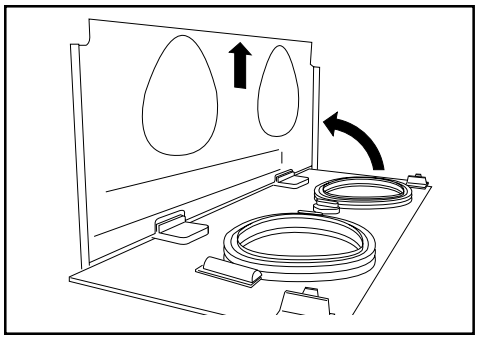

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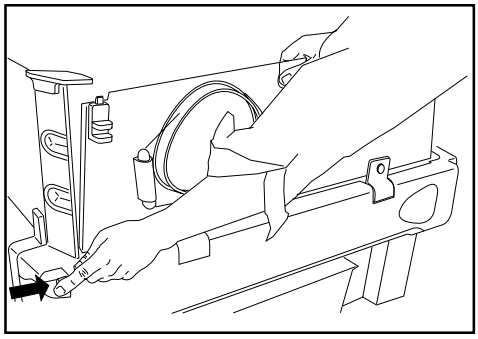

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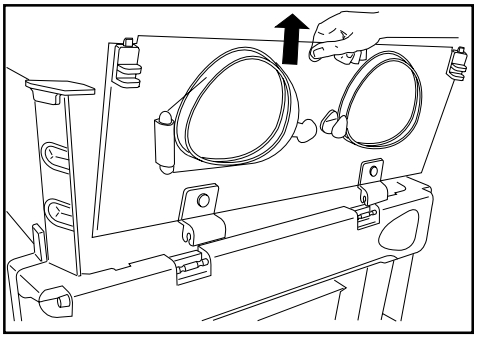

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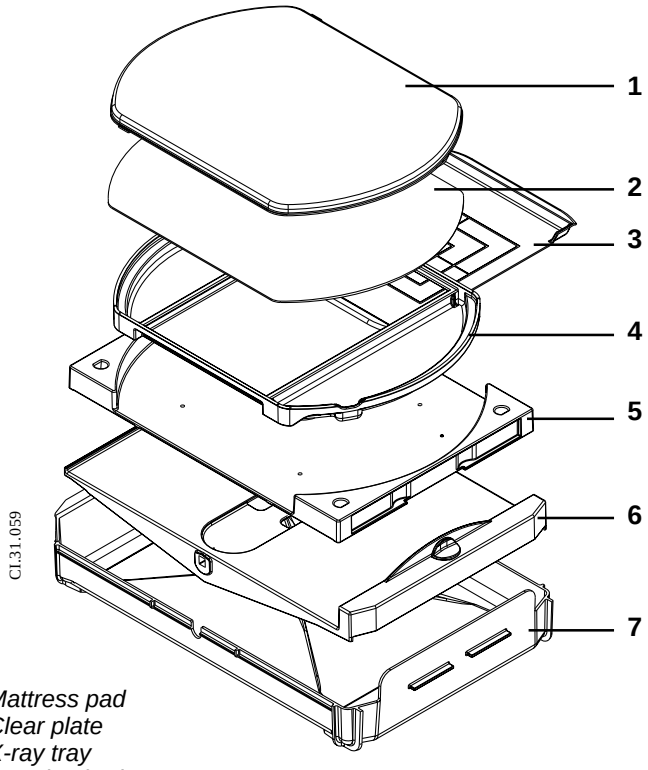
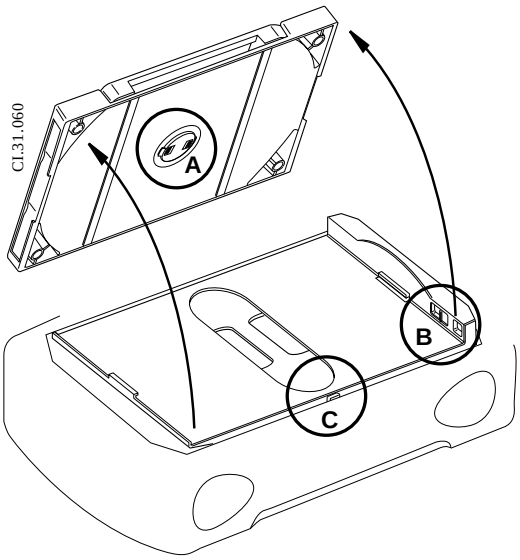
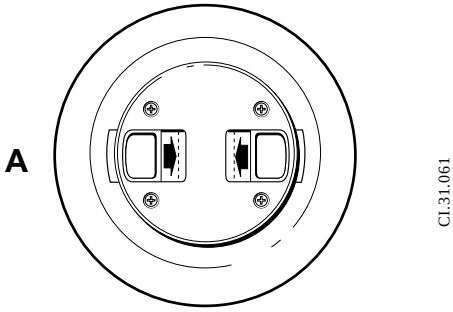
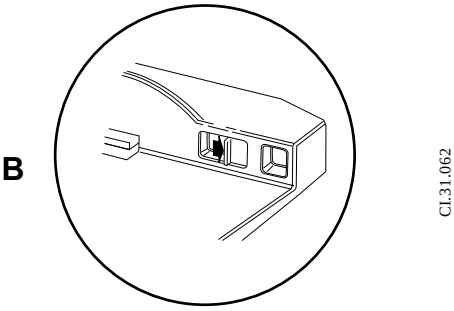
Maintaining the OmniBed

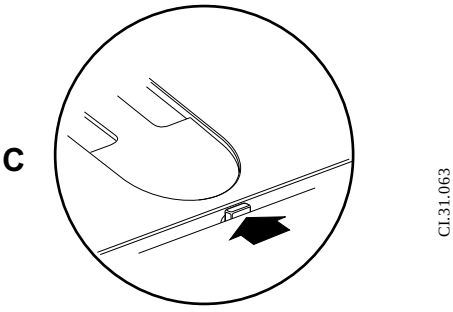


1. *Mattress pad*
2. *Clear plate*
3. *X-ray tray*
4. *Rotating bed*
5. *Translation deck*
6. *Tilt platform*
7. *Pan*









10. Remove the mattress pad. Remove the clear plate under the mattress. Remove the X-ray tray by sliding it all the way out of the bed.
11. Center the translation deck and lift it up out of the chassis. If the deck is pulled out toward either side, the deck locks and can not be removed.
12. Separate the rotating bed from the translation deck by turning it over and squeezing together the two spring latches located in the bed's center (**A**).
13. To remove the tilt platform, first slide open the finger pocket latch, located on the right at the head of the bed (**B**), to release the tilt screw ball. Next, use the tab on right tilt pivot pin (**C**) to slide the spring loaded pin in and lift the tilt platform up out of the bed.
14. Lift the pan up out of the chassis.
15. To remove the humidifier reservoir, grasp the bottom of the reservoir and pull it away from the bed, then pull the reservoir down away from the unit.
16. The intake filter is located behind the humidifier reservoir. Remove the screw that holds the filter cover, then pull out the filter to inspect or replace it.

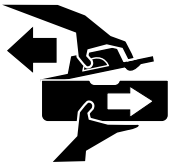
Reverse the steps for assembly.

Cleaning and disinfecting individual components

Humidifier

The humidifier reservoir may be disinfected chemically or steam sterilized.

CAUTION ⚠ Do not use peroxide solutions to clean the humidifier reservoir.



Disassemble the humidifier. Clean the interior with a mild detergent-disinfectant solution. Rinse and thoroughly dry the parts before reassembly. The humidifier may be disinfected using the following solutions:

Generic Formulation	Maximum Concentration Level
Sodium Hypochlorite (bleach)	0.5% Aqueous Solution
Glutaraldehyde	2
Iodophor Solution	0.27%
Cavicide®	100% spray

Steam Sterilization

Completely clean and dry the reservoir before steam sterilization. The reservoir may be steam sterilized for 3 to 5 minutes at 132°C or for 15 to 20 minutes at 121°C. Many repeated sterilization cycles may lead to crazing (small hairline cracks) in some areas that may weaken the reservoir, and eventually require that the reservoir be replaced.

Patient Probe (Reusable)

CAUTIONS ⚠ Avoid placing excessive strain on the probe lead. When cleaning, be careful not to pull on or bend the lead at the probe tip. Always remove the probe from the incubator by grasping the plug at the panel. Do not pull on the probe lead.

⚠ Do not apply cold sterilization or cleaning solutions to the probe connector.

⚠ Do not autoclave or gas sterilize the skin temperature probe. Do not immerse the probe in liquid cleaner.

1. Determine if the patient probe is disposable or reusable:
   - Reusable probes use a separate, heat reflecting patch, are gray and have a round metal disk at the patient end.

- Disposable probes come with a smaller heat reflecting patch already attached, are white and have no metal disk at the patient end.

Note: Disposable skin temperature probes cannot be cleaned.

2. Clean the reusable patient temperature probe by gently wiping with a soft damp cloth containing a disinfecting agent safe for use on the probe materials. Always be sure to wipe dry all cleaning agents after cleaning.

The following lists some cleaning solutions that may be used safely on the reusable probe:

Generic Formulation	Maximum Concentration Level
Sodium Hypochlorite (bleach)	0.5% Aqueous Solution
Glutaraldehyde	2%
Hydrogen Peroxide	6%
Iodophor Solution	0.27%
Cavicide®	100% spray

CAUTIONS ⚠ Use of cleaning/disinfecting solutions containing chemicals not listed above (i.e. alcohol, acetone, etc.), or chemicals in greater concentrations than those listed above, may damage the probe.

Cleaning other components

CAUTIONS ⚠ Do not clean the OmniBed with organic solvents, scouring compounds, strong acids, or strong bases. These compounds may damage components.

⚠ To minimize the generation of static electricity, do not polish the canopy and doors with a dry cloth.

⚠ Do not autoclave or gas sterilize any of the plastic parts.

Divide the components according to cleaning methods. Methods other then those detailed in this section may damage the unit. Always be sure to wipe dry all cleaning agents after cleaning.

Do not clean the radiant heating element or protective cover inside the canopy doors.

Apply the cleaning solutions with a clean cloth or sponge. Dry the parts with a clean damp soft cloth to avoid scratches.

The following list some cleaning solutions that may be used safely:

Generic Formulation	Maximum Concentration Level
Sodium Hypochlorite (bleach)	0.5% Aqueous Solution
Glutaraldehyde	2%
Hydrogen Peroxide	6%
Iodophor Solution	0.27%
Cavicide	100% spray

Do not use the following cleaners; they will **damage** the parts you are cleaning and **are not recommended**:

– Isopropyl Alcohol (in concentrations greater than 15%)
– Quaternary Ammonium (such as Virex)
– Solvents (such as acetone)

CAUTION ⚠ Use of cleaning/disinfecting solutions containing chemicals not listed above or chemicals in greater concentrations than those listed above, may damage the unit.

Note: Do not soak parts in cleaning solutions. Always wipe parts dry of all cleaning solutions. Following these two recommendations will greatly extend the life of the parts.

Note: Any parts you clean with Iodophor Solution will stain yellow.

Note: Do not allow excess cleaning solution to seep in between plastic parts (for example: between the doors and porthole, or between the doors and the hinges) where it can not be easily wiped dry with a cloth.

Notes

Accessories

Air intake filters (10), replace every 3 months	6600-0207-850
Humidifier reservoir	6600-0216-850
Reservoir top only	6600-1492-500
Reservoir bottom only	6600-1493-500
Disposable patient probe (10)	6600-0873-700
Disposable patient probe (50)	6600-0874-700
Re-useable patient probe	6600-0875-700
Heat reflecting probe patch (50)	0203-1980-300
Mattress	6600-1116-500
Routing Clips (6)	6600-0051-851
Door inner wall (with portholes)	6600-1201-500
Large central tubing access grommet	6600-1231-500
Small corner tubing access grommet	6600-1248-500
Porthole seal	6600-1249-500
Wristlet (10)	6600-0211-850
Iris cuff (10)	6600-0499-800
Fan seal	6600-1164-500
Fan motor bushing	6600-1440-500
Fan	6600-1738-500
Power cord, North America	6600-0775-603
Power cord, Europe	6600-0574-612
Fabric hood cover	6600-0825-800
Service manual	6600-0343-000

Appendix

Specifications

Power Requirements

10.5A @ 100v ~, 50/60 Hz	2A @ 100v ~, 50/60 Hz
9A @ 115v ~, 50/60 Hz	2A @ 115v ~, 50/60 Hz
4.5A @ 220v ~, 50/60 Hz	1A @ 220v ~, 50/60 Hz
4.5A @ 230v ~, 50/60 Hz	1A @ 230v ~, 50/60 Hz
4.5A @ 240v ~, 50/60 Hz	1A @ 240v ~, 50/60 Hz

Accessory Outlets

Standards

Designed to meet requirements of
IEC 601-2-19 (Amendment 1)
IEC 601-2-21 (Amendment 1)
IEC 601-1
IEC 601-1-2

Operating Environment

Temperature	20 to 30°C
Humidity	10 to 95% Non-condensing relative humidity

Storage Conditions

Temperature	-25 to 60°C
Humidity	10 to 95% Non-condensing relative humidity
Pressure	50 to 106 kPa

User Control Settings

Patient control temperature	35-37.5°C in 0.1° increments
Air control temperature	20-39°C in 0.1 increments
Radiant heat power	0-100% in 5% increments
Humidity	
Servo- % relative humidity	30-95% in 5% increments
Manual- increments	1-10

Alarms

High Air Temp	1.5°C over AST (air set temperature)
Low Air Temp	3.0°C under AST
Baby Hot	1.0°C* over BST (baby set temperature)
Baby Cold	1.0°C* under BST
Fan Failure	Failure of blower system
Air Temp >38°C	>38°C for AST <37°C
Air Temp >40°C	>40°C air temperature for AST >37°C
Air Probe Failure	Compartment air probe failure
Air Probe Disconnect	Disconnection of compartment air probe
Power failure	Power switch on but no power
System failure	Non-recoverable system failure
Add Water	Humidifier water level low
Scale	
Weight Exceeds Maximum	Greater than 8kg load (visual only)
Scale Failure	Detectable system failure (visual only)

* Can be re-set on the Service screen to 0.5°C

Appendix

Performance

System

Control accuracy	± 1.0°C	Control Temp vs. Avg. Incubator Temp with level bed in manual mode.
Variability	± 0.5°C	Incubator Temp vs. Avg. Incubator Temp
Warm-up time	< 50 min.	Time to reach 39°C control temp from cold start in 25°C 50% RH room ambient
Patient measurement accuracy	± 0.3°C @ 30°C to 42°C	Accuracy of patient temperature measurement system within range of temperature measurement
Air Velocity	≤ 10 cm/sec	In Whisper Quiet™ mode velocity measured 10 cm above the center of the mattress, closed bed
CO_2 level	0.2%	Maximum CO_2 level measured per IEC 601-2-19, clause 105.1
Sound level	≤ 49 dbA	In Whisper Quiet™ mode closed bed sound level measured 10 cm above the center of the matress

Humidity

Servo control accuracy	± 10 % for settings up to 85%; minimum 75% for settings >85%	Humidity control setting vs. average humidity at 10 cm above center of bed
Manual humidity	>75%	Humidity level maximum setting in 25°C 50% RH room ambient
Ramp-up time	<50 minutes	Time to reach 75% RH with a 39°C control temp from cold start in 25°C 50% RH room ambient
Operating time without refill	>12 hours	Operational time at 65% RH control setting with one filling of reservoir in 25°C 50% RH room ambient

Weight Scale

Functional range	300 gm to 8 kg
Accuracy	± 10 gm
Resolution	10 gm (factory setting) or 5 gm

Mechanical Specifications

	Canopy closed bed lowered	**Canopy closed bed raised**	**Canopy open bed lowered**	**Canopy open bed raised**
Height:	147 cm	174 cm	208 cm	236 cm
Width:	69 cm			
Depth:	112 cm			
Weight:	129 kg			

Accessories

	Maximum load
Storage drawer	7 kg
Monitor shelf	23 kg
Instrument shelf	9 kg
Total each accessory rail	23 kg

Warranty

This Product is sold by Ohmeda Medical under the warranties set forth in the following paragraphs. Such warranties are extended only with respect to the purchase of this Product directly from Ohmeda Medical or Ohmeda Medical's Authorized Dealers as new merchandise and are extended to the Buyer thereof, other than for the purpose of resale.

For a period of twelve (12) months from the date of original delivery to Buyer or to Buyer's order, but in no event for a period of more than two years from the date of original delivery by Ohmeda Medical to an Ohmeda Medical Authorized Dealer, this Product, other than its expendable parts, is warranted to be free from functional defects in materials and workmanship and to conform to the description of the Product contained in this operation manual and accompanying labels and/or inserts, provided that the same is properly operated under the conditions of normal use, that regular periodic maintenance and service is performed and that replacements and repairs are made in accordance with the instructions provided. This same warranty is made for a period of thirty (30) days with respect to expendable parts. The foregoing warranties shall not apply if the Product has been repaired other than by Ohmeda Medical or in accordance with written instructions provided by Ohmeda Medical, or altered by anyone other than Ohmeda Medical, or if the Product has been subject to abuse, misuse, negligence, or accident.

Ohmeda Medical's sole and exclusive obligation and Buyer's sole and exclusive remedy under the above warranties is limited to repairing or replacing, free of charge, at Ohmeda Medical's option, a Product, which is telephonically reported to the nearest Ohmeda Medical Field Service Support Center and which, if so advised by Ohmeda Medical, is thereafter returned with a statement of the observed deficiency, not later than seven (7) days after the expiration date of the applicable warranty, to the Ohmeda Medical Service and Distribution Center during normal business hours, transportation charges prepaid, and which, upon Ohmeda Medical's examination, is found not to conform with above warranties. Ohmeda Medical *shall not be otherwise liable for any damages including but not limited to incidental damages, consequential damages, or special damages.*

There are no express or implied warranties which extend beyond the warranties hereinabove set forth. Ohmeda Medical *makes no warranty of merchantability or fitness for a particular purpose with respect to the product or parts thereof.*

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